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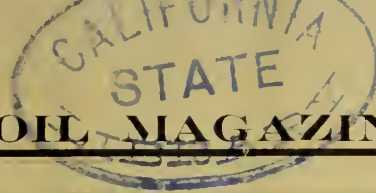
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THE OLDEST OIL MAGAZINE IN THE WEST

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST



Vol. 5—No. 1

San Francisco, Cal., July, 1912

Price 20 Cents

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BY ALFRED B. ABBEY, CIVIL ENGINEER
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AMERICAN
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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 5

SAN FRANCISCO, CAL., REVIEW OF JULY, 1912.
Issued August 16

No. 1



Action of Rotary and Stand- ard Drilling Tools

Written Especially for the California Derrick

By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer.

(Continued from last month)

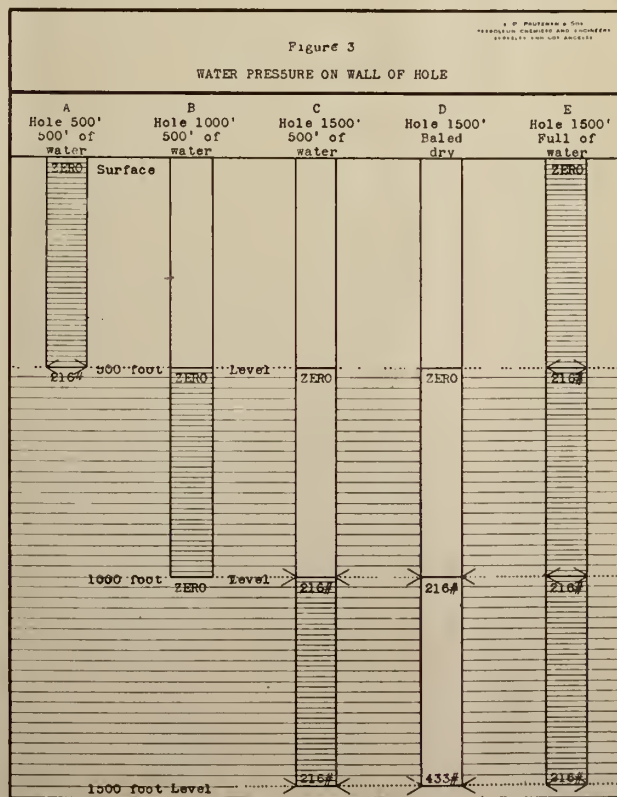
To illustrate, let us take a case where first water is encountered 500 feet below the surface. A hole is drilled to a depth of 1,500 feet, we will say, shutting off outside waters as found, and carrying 500 feet of water in the hole (these round figures for illustration only). Under the same conditions a rotary hole is being carried to the same depth, this hole being, of course, full to the top at all times. The pressures on the walls of the hole at various points are as indicated in Figure 3. At "A" (in Figure 3) the hole is 500 feet deep, and is full of water. As there is no water in the formation outside, down to the 500-foot level, the pressure of water, outward, at the bottom of the hole is that of a column of water 500 feet high, or about 216 pounds per square inch. The pressure at the surface is, of course, zero.

In "B" the hole has been deepened to 1,000 feet, and still has 500 feet of water. As the water in the formation comes to 500 feet of the surface, the depth of water is the same inside and outside, at every point, and thus the pressures are neutralized all the way down.

In "C" the hole has been carried to 1,500 feet, and still carries 500 feet of water. At 1,000 feet there is a depth of water of 500 feet, outside the hole, equal to a pressure of 216 pounds per square inch, with no water inside the hole, at this depth, to offset the pressure from without.

At the bottom of the hole, the depth of water outside is 1,000 feet, but this is in part offset by a depth of 500 feet inside, so that the net pressure exerted inward at the bottom of the hole is the same as that at the 1,000 foot level, the weight of a column of water (1,000-500 or) 500 feet high, or 216 pounds per square inch.

In "D" the hole is still 1,500 feet deep, but has been baled dry. The pressure exerted inwardly on the wall of the hole is now unbalanced by any pressure from within, and is thus equivalent to the depth of water at any given point, or, zero at 500 feet (water level), 216 pounds at the 1,000 foot level (where the water is 500 feet deep), and 433 pounds at the bottom of the hole (where the water is 1,000 feet deep). All



these pressures act from the outside toward the inside of the hole.

In "E" we have a hole 1500 feet deep, full of water to the top. At the 500 foot level the water inside is 500 feet deep, and as there is no water outside to offset the weight of this column, the pressure at this point, exerted outwardly, is 216 pounds per square inch.

At the 1000 foot level we have, inside, a column of water 1000 feet high, but this pressure is in part offset by a depth of water of 500 feet outside, and again at the 1500 foot level we have a column of water 1500 feet high partly offset by a depth outside of 1000 feet, so that at both these points the net or unbalanced pressure due to the excess weight of the column inside is 500 feet, or 216 pounds, these pressures being exerted outwardly from the inside.

In other words, the pressure on the wall of the hole at any point in its depth will be: The difference between the two distances from the surface of the water, inside and outside the hole, to the given point, in feet, times the pressure exerted by a column of water one foot high (0.433 lbs. per square inch). And this pressure will be exerted from the side on which the level is highest, toward that on which it is lowest. So that if, for instance, water level is 100 feet higher inside the hole than outside it, the wall of the hole at every point below the level of the outside water will be supported by a pressure of 43 pounds per square inch. Or, if the level outside is 100 feet higher, every point below the level of the outside water will be subjected to a pressure from without, of 43 pounds to the square inch.

But these pressures, at least those acting from the outside, and in many cases those acting from the inside, are limited by the capacity of the wall of the hole to hold water. It must be borne in mind that the hole itself is not water tight, but more or less open to the passage of water through its walls, so that the moment a difference in pressure is set up, through any cause, water immediately begins to permeate the wall of the

hole, passing from that side where the pressure is higher to the side where it is lower, and this passage of water will be continuous so long as there is any difference in pressure. For reasons given in a later paragraph, it is much easier for the water outside to make its way into the hole than for the water inside to get out, and thus while it is usually easy to maintain a high pressure from the inside, it is seldom the case that any great pressure of water could be exerted from the outside, for more than a short time. But every time that the level of the water inside the hole is carried below that of the water outside, some pressure is exerted from without, and water immediately begins to seep through the wall of the hole.

Suppose the hole to be full of water to its natural level, that is, to the level of the water outside. The tools are now drawn, and the well is sand pumped, reducing the level a few feet, say ten or twenty. The outside water immediately begins to force its way into the hole, and at the same time exerts a pressure on the wall proportional to the difference in levels, 4 1-2 pounds with a difference of ten feet, 9 pounds with a difference of twenty feet, and so on. As this water filters through the wall of the hole, it washes out of the wall and into the hole more or less fine sediment, clay or sand, and this being repeated every time the hole is sand pumped, some one spot is finally too much weakened, a slide starts, and the wall comes down with a run, collapsing the casing, choking the hole, or throwing it out of true.

That this is the principal cause of caving cannot be doubted, and this is probably the main reason why rotary holes are so much less subject to this sort of accident. As while a rotary hole must, in the nature of the case, be constantly filled to the surface with water or mud, a hole drilled with standard tools need not be, and often is not, filled above natural water level. And where this is the case, no matter how deep the water may be in the hole, the operation of the tools and baler necessarily bring about a constant alteration of the degree and direction of the pressure on the wall, which tend constantly to disturb its equilibrium and start a cave.

General Pipe Line Company

The General Pipe Line Company, a subsidiary of the General Petroleum Company, is now receiving pipe from the east for its line from the Midway-Maricopa district to Los Angeles and the port of San Pedro. Forty-five miles of pipe was ordered. The construction of this line will put the company in the field as an active competitor of the present big marketers for the purchase of oil.

The company's first pumping station in Los Angeles is now under construction. There will be fifteen stations, all told. The General Petroleum Company has taken over the property of the Bear Creek Oil Company since our last issue. This latest acquisition comprises 420 acres in section 14, 31-22, Midway, \$750,000 in stock and bonds of the General being accepted as payment by the Bear Creek. The company immediately started a number of new wells. The Bear Creek property is recognized as a most valuable acquisition to the General's holdings.

On the old Graham and Loftus property in Brea Canyon, Fullerton held, the General Petroleum has brought in a 400-bbl. well, the best ever drilled on that lease, which consists of 320 acres with an output at present of 800 bbls. daily. The General is doing things.

July Dividends

Dividends paid by California-owned and California oil companies during the month of July aggregated \$763,628.73, this large distribution during an "off month" being brought about as the result of the payment by the Empire Oil Company of a dividend of \$100,000 in one lump, or 50 cents on the dollar, the same being due to the money paid for the company's property by English capitalists; by an unexpected payment of \$25,000 by the Peerless Oil company, which is also disbursing money received from the sale of its property to English financiers; and by the \$80,000 distribution of the Mexican Petroleum Company, which is controlled by Californians. Following is a list of companies paying, showing the rate of dividend and total amount paid by each:

COMPANY	Amt. Per Share	Total Disburse- ment
Amalgamated	\$ 1.00	\$ 50,000.00
Caribou .....	.01	8,070.30
Claremont .....	.01	5,000.00

Central .....	.0075	7,500.00
Columbia .....	.01	9,992.26
Del Rey .....	.005	3,977.45
Empire .....	.50	100,000.00
Fullerton .....	.05	30,000.00
Home .....	.01	5,000.00
Monte Cristo .....	.005	12,500.00
Mount Diablo .....	.01	5,000.00
Nevada County .....	.06	15,000.00
New Pennsylvania .....	.005	5,000.00
Olinda Land .....	.0075	7,500.00
Paraffin .....	.01	3,000.00
Peerless .....	.25	25,000.00
Reeord .....	.01	5,000.00
Rice Ranch .....	.015	4,500.00
S. F. & McKittrick .....	.01	5,000.00
Sauer Dough .....	.0075	2,992.50
Section 25 .....	.50	20,000.00
State Con. ....	.01	5,000.00
Traders .....	.006	9,000.00
Union .....	.006	184,743.60
Union Provident .....	.006	91,402.02
United Petroleum .....	.006	48,450.60
Western Union .....	.005	5,000.00
W. K. ....	.02	10,000.00
Total		\$683,628.73
Mexican Pet. Ltd. Pfd. ....	.002-3	80,000.00
Grand Total ..		\$763,628.73

The Orange Oil Company, operating in Brea Canyon, expects to bring in its No. 3 as a gusher within a few days. The hole is 3,820 feet deep, and for 400 feet the bit has been in the sand. The well is only 500 feet from the Birch Oil Company's phenomenal producer that has been flowing for a year at 2,400 barrels a day. This hole is 3,960 feet deep, and it is believed the Orange Oil Company has struck the same sand. The Pico Oil Company, which joins the Orange on the east, has a well that was brought in three years ago at 500 barrels and is still flowing 375 barrels. Brea Canyon is one of the richest spots in the Fullerton field and all the product is of a high gravity.

The Associated Oil Company is having another tank steamer built at the Newport News Company's plant, which will be the fifth for this concern, to operate on this coast. The new steamer will have a capacity of 50,000 barrels.

California Production for and Field Operations During June, 1912

California's total June production amounted to 7,345,702 barrels of oil, which tops May's production by 12,522 barrels; also, the daily production grew 8,313 barrels (although it does not show in the figures because of the difference in number of days) during June, but — the daily average consumption grew 14,396 barrels, now totaling 230,625 barrels, so that from a daily average surplus of 20,325 during the month of May the June surplus dwindled to 14,232 barrels daily and the outlook is that with the new contracts known to be due to come in force shortly, there will soon be no "average daily surplus" at all. That is, unless the renewed activity pushes another "plethora"

of oil on the market from an unexpected source. However, the wells already drilled are not producing to capacity in a great many cases and it is suspected that it will take more than a paper showing to get the more level headed operators to bring prices down again by bringing their oil out in unneeded quantities.

As we are discussing the first six months' production and market conditions elsewhere in this issue, the same of course including June, we will not here go further into the June statistics, except to give the regular table which shows the situation in detail. Same follows:

SUMMARY

County	Rigs Comp'	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Prod. for Month	
Kern River	Kern	9	7	1627	7	2	1,047,300
McKittrick	Kern	12	10	215	5	1	532,728
Midway	Kern	19	33	644	21	.....	2,032,838
Sunset	Kern	6	33	252	5	.....	466,320
Coalinga	Fresno	15	75	852	7	2	1,593,668
Watsonville	Santa Clara .....	.....	1	5	.....	.....	3,600
Arroyo Grande	San Luis Obispo .....	.....	1	.....	.....	.....	.....
Lompoc	Santa Barbara .....	.....	4	24	2	.....	87,300
Santa Maria	Santa Barbara	4	25	164	3	.....	490,789
Summerland	Santa Barbara .....	.....	1	122	.....	.....	5,450
Santa Paula	Ventura	5	30	290	6	3	63,582
Newhall	Los Angeles .....	.....	3	78	.....	.....	10,649
Salt Lake	Los Angeles	1	13	285	1	.....	244,414
Los Angeles	Los Angeles .....	.....	.....	406	.....	.....	34,310
Whittier-Coyote	Los Angeles .....	.....	20	143	2	1	85,311
Fullerton-Brea-Canon	Los Angeles .....	.....	1	56	.....	.....	2,400
Lost Hills	Orange	1	49	269	1	1	530,214
Salinas Valley	Kern	9	19	26	7	1	114,829
.....	San Benito and	.....	.....	.....	.....	.....	.....
Repetto	Monterey .....	.....	2	.....	.....	.....	.....
.....	Los Angeles .....	.....	1	.....	.....	.....	.....
.....	.....	81	428	5458	67	11	7,345,702

SUMMARY

Stocks, May 31, 1912

44,017,715

Production, June, 1912

7,345,702

.....

.....

Consumption, June 1912

6,918,759

.....

.....

Stocks, June 30, 1912

44,444,658

Daily Average Production

244,857

Daily Average Consumption....

230,625

.....

.....

.....

14,232

Stocks, May 31, 1912	44,017,715
Production, June, 1912	7,345,702
.....	51,363,417
Consumption, June 1912	6,918,759
Stocks, June 30, 1912	44,444,658
Daily Average Production	244,857
Daily Average Consumption	230,625
.....	14,232

June Exports From San Francisco

Exports from San Francisco in June show a gain over those for the corresponding month in 1911 of 1,433,741 gallons. The gain in value was from \$303,154 to \$412,242, the total gain thus amounting to \$109,088.

The gain in exports from San Francisco during the twelve months ending with June 1912 over those of the preceding twelve months, ending June 1911, was tremendous. As against 109,800,041 gallons, valued at \$2,587,059, exported during the twelve months ending June 1911, for the twelve months just concluded, 171,192,095 gallons of the different oils, valued at \$4,617,653 was exported from San Francisco. Thus the total gain in gallons was 61,392,054 or considerably over 50 per cent. The increase in money value was so much greater that it is apparent that largely increased prices were received for the product; for while the gain in exports was over 50 per cent, the money received was close to 80 per cent greater than for the year ending June 1911. The exact money gain totalled \$2,030,594. As 1911 gained scarcely anything on 1910 it will be seen that the year just concluded has been a very unusual one. The spurt is phenomenal and can be accounted for only by the fact that the market has been pushed with a zeal as tireless as that with which California producers have brought their oil into the market.

Standard Oil has created a market in the Far East that will take an ever increasing quantity of products to supply. In addition to this, the use of all petroleum products exported, especially residuum, is growing with extraordinary rapidity; the exports of residuum growing from four and a half million odd gallons last fiscal year to thirty-five and a quarter million gallons (round numbers), the fiscal year just closed. The gain is almost in the ratio of eight to one.

There was a drop in the quantity of crude exported. Same amounts to seventeen million gallons, which explains to a considerable degree the gain in residuum; naphtha jumped from

115,194 to 198,241 gallons for the year; illuminating made an enormous stride; from 39,422,799 gallons exported from this port during the fiscal year ending June 30, 1911, in the single year to June 30, 1912, the exports amounted to 87,078,947 gallons, more than double the preceding 12 months' exports. The gain in returns was proportionate: from \$1,410,781 it jumped to \$3,242,154. The lubricating and paraffin market expanded from 568,799 gallons valued at \$130,216 to 575,503 gallons valued at \$122,438; in other words, while the exports increased slightly the price dropped slightly.

Altogether, however, it was a splendid export year and if the same advance is shown the coming year, combined with the home markets, the producers outlook will be very bright indeed.

STATE MINING BUREAU'S FIGURES OF 1911 HYDRO-CARBONS

Our Excellent State Mineralogist, Mr. W. H. Storrs, submits the following advance report on the Hydro-carbon group of minerals produced in California during the year 1911:

Hydro-carbons: including Petroleum, Natural Gas Bituminous rock, exclusive of asphalt and all other refined products, to the value of \$41,161,226 were produced in California during 1911.

Fourteen counties contributed to the above total, as follows:

1. Kern	\$20,373,344
2. Fresno	9,344,085
3. Orange	4,097,980
4. Los Angeles	3,329,180
5. Santa Barbara	3,305,103
6. Ventura	352,735
7. San Joaquin	114,433
8. Sacramento	83,890
9. Santa Cruz	80,371
10. Solano	40,274
11. San Luis Obispo	30,376
12. Santa Clara	8,505
13. Kings	800
14. Humboldt	150

The output is divided as follows:

Petroleum: Sold in 1911, or in storage Dec. 31	\$37,920,820
Petroleum: Used as fuel in the field	2,631,268
Natural Gas	491,859
Bituminous Rock	117,279

Total

The Oil Fields of Colombia, S. A.

By William Plotts, of Whittier, California

Author of "The Isotherm Hypothesis of the Origin of Petroleum, Coal and Other Carbonaceous Products."

Probably no country that contains petroleum has been so little explored by oil men as Colombia, South America. On every visit to that country I hear of oil showings in new and unexpected localities or regions; and as in every locality that I visited I found oil showings substantially as reported, I have no reason to doubt the existence of oil wherever reported throughout this country; the only exaggeration being in the abundance of the seepages or markings. This I consider of small importance, as it is owing more to the character of the oil, and to the amount of disturbance and erosion that the oil horizon has been subjected to, than to the quantity of the oil that the region may contain.

Where an oil horizon containing oil of an asphaltic base or other black residuum in considerable quantities has been subjected to erosion, the seepages are so plain that "the who runs may read", but the showings from oils like most of those in Colombia, that contain almost no basic substance, are necessarily slight, and not easily detected, and probably would not have yet been noticed except for the gas that accompanies them, and which caused Humboldt to regard the Colombian country as "a truly volcanic region."

Companies Now Operating in Colombia

The Colombian Oil and Gas Company, a Canadian concern, owned principally by Sir Clifford Sifton, and in which J. W. Kelly, formerly of Parkersburg, W. Va., and F. M. Kiser, are interested, is still pounding away. They are drilling a well six miles southeast of the group of shallow wells that they drilled near Puerto Colombia. This well is now (June 26) 1200 feet deep, and has recently passed through a light oil stratum which still shows in the drillings. They have obtained a little oil in all of their wells, but no regular sand formation.

The Cartagena Oil Co., with American drillers, and a California foreman (Mr. Warner) have their well on the Rotane concession down 1850 feet deep, and recently passed through a little oil. This well is about 80 miles south of the others described. No other drilling worthy of the name has been done in the republic, but there are other operations contemplated as soon as a water supply can be obtained, the rainfall for the last two years having been less than half the normal, which is about 30 inches I should judge, by the looks of the tree growth.

Uses to Which Put and Analysis of Colombia Oil and Gas Company's Product

The oil from the Colombia Oil and Gas Company's wells is sold in Barranquilla and perhaps other towns at 20 cts. per gallon. It is used mainly for dumping in mosquito hatcheries. It is claimed that it can be used in its crude state for running motors. Following is an analysis of this oil made in Los Angeles.

Benzene 22 per cent; engine distillate 21 per cent; kerosene 50 1-2 per cent; stove distillate 6 per cent. The absence of the lighter gasoline in the sample may be accounted for by the extremely volatile nature of the oil, which allowed the lighter parts to evaporate.

The company have made no preparations for marketing their product in quantity, and the yield of the wells at present would probably be small.

Enterprise of Native

I have received information from several sources of a Colombian in the Cúcuta country, near the Venezuela line, who, having observed the oil signs, secured a very large concession from the government several years ago on condition that he should discover oil, and place the prepared products on the markets in a specified time.

As he was practically moneyless the proposition would have stumped many a practical oil man. However, he sunk a shaft at a seepage, securing a supply of several barrels of crude a day, improvised a refinery out of an old spirit distillery, and actually turned out satisfactory distillates. Some foreigners then offered him a good sum for his concession but he refused, stating that his tiny plant was profitable. The writer has a

small sample of this oil, which resembles Pennsylvania green oil.

Extension and Location of Colombian Fields

In a report published last spring, after a trip in the interior 300 miles south of Barranquilla, I described the asphaltum deposits of that region as being scattered along the base of the mountains for about 100 miles east of the Magdalena River.

It now appears that practically this same oil field extends a couple of hundred miles farther south, but the oil is of a different character, and does not cause asphaltum deposits. It is said that considerable oil was taken from some seepages east of Honda, and used to lubricate the street car tracks in Bogotá. To the west of the River Magdalena, also, oil showings are reported to occur at several places, notably well up the San Jorge River, which is west of the Cauca River.

Customs of the Country

South Americans get along without many things which we consider essential, notably sewers in the cities and wagon roads in the country. There are towns of several thousand people without any postoffice or other mail facilities. This seems the more remarkable when we consider that there are nothing but bridle trails in and out of these towns. The most experienced travelers will get lost on those winding trails unless they employ a guide in every locality with which they are unacquainted.

Barranquilla, the second city of commercial importance in the republic, has a post-office, but there is no outside drop box or other facilities for mailing a letter except when the postoffice is open, which is said to be from 8 to 5, but often is not.

If you are considerate to your landlord in Barranquilla you will use as little water as possible for your morning showerbath. Of course the bath water runs out into the street, where you can view the pigs burrowing in order to retain it, while they enjoy it fully as much as you did a few minutes before, but only foreign tenderfeet notice such picturesque scenes, although after you become acquainted with the country you will see many interesting and curious sights; and if you are debilitated and dyspeptic you will find the saddle a much more healthful mode of travel than trolley and motor cars.

Colombia greatly needs the development of her oil fields, in order to obtain cheap power for the development of her other natural wealth. Gasoline of poor quality costs 45 to 50 cents (American) at Barranquilla, and much more in the interior.

There is an oil refinery at Cartagena, that imports its crude oil, which is duty free. There are oil seepages within a few miles of Cartagena.

The greatest need of power in this country, next to transportation, is in agricultural operations, which have been carried on for four centuries at least, without plowing. I have never seen a plow in all my traveling in Colombia. Heavy draft animals do not stand the climate well, and the animals raised there are entirely too small and trifling for draft purposes. The soil in Colombia is very fertile, and with proper tillage would yield abundantly. The best bananas that come to the States come from the part of Santa Marta, Colombia, and all the tropical fruits are better flavored than those from the more rainy parts of the tropics.

The most important exports are coffee, cotton, cocoa, ivory nuts, rubber, and a kind of gum or rosin which all goes to Germany.

The north Colombia ports are on a line from the Panama Canal to Europe, and when that waterway is finished there is likely to be excellent transportation facilities to that country.

It is reported that a new steamship line to connect the Pacific Coast with Australia will soon be established with a fleet of eight vessels, all of which will be equipped to burn liquid fuel. The new line is being promoted by J. J. Moore & Co., who at present operate an occasional steamer between these points.

Recent Research Work and Publications of the United States Geological Survey and Bureau of Mines

AMERICA'S GREATEST PETROLEUM YEAR

Production for 1911 was 220,449,391 Barrels and Constituted Nearly Two-thirds of the World's Total Output

Petroleum production in the United States in 1911 surpassed its own record made in 1910 by an increase of nearly 14,000,000 barrels. In 1910 the output was 209,557,248 barrels. The total production of the world also surpassed all previous records, amounting to over 345,000,000 barrels, and of this the United States produced more than 63 per cent. The value of this enormous output of oil in the United States for 1911 was \$134,044,752, the average price being 60.8 cents per barrel. Final figures have been compiled by David T. Day, the petroleum statistician of the United States Geological Survey, and have just been made public in a statement issued by the Survey. The increase for the year was caused principally by the gain in California, which was by far the largest producer, its output being over 81,000,000 barrels. Another factor in the increase was the discovery of oil at Vinton, La., and the comparatively new Caddo field in Louisiana also grew in importance. A find of high-grade oil at Electra in northern Texas, was another notable event of the year.

Oklahoma, with a production of more than 56,000,000 barrels, extended its field well into Osage and Pawnee counties, and oil was discovered still farther west, in Kay County, considerably increasing the Mid-Continent yield. All these gains in the Mid-Continent field, however, were offset by the declines in Illinois and States farther east; in short, all fuel oils increased and refinery oils declined. Another feature, the influence of which is being felt in 1912, was the increase in transporting and refining capacity, which in spite of the general increased yield of the country led to a drain on stocks in the Mid-Continent field and the result has been a general increase in the price of crude oils for refining.

With a gain in production of nearly 11,000,000 barrels and with an increase in price at the end of the year, it is evident that an unusual condition in the oil market existed. The three commodities of general market value to be considered in connection with crude oils are gasoline, kerosene, and residuals, the last suitable for fuels in the West and for lubricants and wax in the East. In the trade "naphtha" is the name generally applied to oils lighter than kerosene as distilled from crude oil, but by the public the term "gasoline" is applied to the light fraction of the oil suitable for internal-combustion engines. In fact, when crude naphtha is redistilled it is for the most part separated so as to yield gasoline and lighter or heavier kerosene. It is a matter of interest that the demand for gasoline has become so imperative that little or none is now allowed to lower the safety of lamp oils; the latter have therefore greatly improved in character.

In the production for 1911 California led off, with 81,134,391 barrels; Oklahoma took second place with 56,069,637 barrels; Illinois was third with 31,317,038 barrels; and Louisiana was fourth with 10,720,420 barrels. The prices of the different oils varied greatly, ranging from 47 cents to \$1.32 a barrel. Thus while the production in Pennsylvania was only 8,248,158 barrels, its value was \$10,894,074, whereas Louisiana, which produced 10,720,420 barrels, received for it only \$5,668,814.

The greatest increases in production in 1911 were in California, 8,123,831 barrels; in Oklahoma, 4,040,919 barrels; and in Louisiana, 3,879,025 barrels. The principal decreases were in Illinois, 1,099,258 barrels.

The following table of total production shows the general increase in production for the United States since 1901.

	Barrels
1901	69,389,194
1903	100,461,373
1905	134,717,580
1907	166,095,335
1909	183,170,874
1911	220,449,391

SIGNIFICANCE OF DROP IN COAL TONNAGE MINED

Fuel Oil Supplants Coal in Washington and Oregon

The production of coal in Washington in 1911 was 3,572,815 short tons, valued at \$8,174,170, according to the final returns compiled by Edward W. Parker, of the United States Geological Survey, in co-operation with the State Geological Survey of Washington.

Washington is the only one of the Pacific Coast States in which coal mining is an industry of any importance. But Washington, although more remote, is like Oregon in that it is now feeling the influence of the competition of California fuel oil. Even the railroads having their own coal mines are using fuel oil in their locomotives on the mountain divisions, where a sparkless fuel gives protection against forest fires. Some of the Washington coal mines are within less than 50 miles of Puget Sound, yet most of the steamers plying in those waters are using oil for fuel, the saving in labor and the cleanliness of the liquid fuel giving it a decided advantage over coal, even when the latter may be cheaper at first cost. The decreased production of coal in Washington seems to be assignable to no other cause than the substitution of oil for coal, as trade conditions generally in 1911 were satisfactory. This decrease was 339,084 tons, or 8.67 per cent, from the production of 1910. The value decreased \$1,590,295, or 16.29 per cent. The principal decrease in production was in Kittitas County, in which the larger part of the output is taken from mines controlled by the Northern Pacific Railway. In fact, the decrease in Kittitas County was more than that of the whole State and bears witness to the influence of the use of oil in the railroad locomotives.

The number of men employed in the coal mines of Washington

in 1911 was 6,498, who worked an average of 225 days against 6,314 for 256 days in 1910. At eight of the mines in the State washing plants have been installed, and 392,502 short tons of coal was washed in 1911, some of the washed coal being used in the manufacture of coke. The cleaned coal amounted to 338,707 short tons, and the refuse to 53,794 tons.

The returns to the United States Bureau of Mines show that 25 men were killed in the coal mines of Washington in 1911, the death rate per thousand employees was 3.85, and the number of tons mined for each life lost was 89,883.

Bureau of Mines Paper on "The Status of the Gas Producer and of the Internal Combustion Engine in the Utilization of Fuels."

Technical paper 9, of the Bureau of Mines, by Robt. Heywood Fernald is an excellent treatise. This paper is too long for us to review it in full; we can merely skim over it and give its contents with the hope that those who should be interested will possess sufficient energy to write to Washington for the paper. The paper begins by stating that investigations into the possibility of generating producer gas for power purposes in a commercial way from the various mineral fuels of the country, have been carried on for some time by the Government. The development of greater efficiency in the use of all fuels will probably be brought about as the result of these investigations. Opportunities for marked economies are shown to exist. The nature of the tests, the fuels tested, conservation of fuel, elimination of the smoke nuisance, etc., all receive special treatment. What producer gas is, its sources, composition and applications, to-wit, as a power generator, for metallurgical and heating purposes, and other uses to which it can be put as fuel, are discussed. (Gas producer fuels, fuels used in the pressure of down-draft producer (this includes crude oil), capacity of producers, rapid introduction of gas producer plants, low fuel consumption in same, the internal combustion engine, large gas-engine units, the Diesel engine, etc., etc.; each of the above subjects receive discussion in paragraphs of lengths proportionate to their interest and value to the technical public.

Under the heading "Crude Oil" is discussed the development of the crude oil gas producer, most of which appears to be a discussion of the Grine-Nelles (as it was originally known) producer. This was discussed in the CALIFORNIA DERRICK last year. An interesting statement concerning the Grine producer is as follows: "With crude oil as fuel costing 95 cents per barrel, or 2.3 cents per gallon, the plant (at Hollywood, Cal.) is reported to develop the same power per gallon of crude oil as is ordinarily developed by the standard internal-combustion engine operating on distillate at 7 cents per gallon. Including the cost of fuel, labor, supplies, interest, depreciation, and taxes, Mr. Grine states the cost per brake horse-power hour to be 0.76 cents for a plant of 100 h. p. rating."

In a special paragraph the wonderful development of the internal-combustion is displayed under the sub-head of "Large Gas Engine Units" where it is shown that the development of large gas engine units has come practically within the last decade. But of even greater interest than this is the portion of the paper devoted to Diesel Engines. The salient facts about the development of the Diesel are given in some five pages — but those pages speak volumes. For instance, engines of the Diesel type are now common in Europe. "In Swiss electric stations Diesel engine units of 2,000 horse power are now in use and one writer states that the development of the large-sized Diesel engine has been so successful that it will not be long before 1,000 horse power developed in one cylinder will be considered nothing extraordinary. One company of world-wide reputation is now considering more than 2,000 horse power in the single cylinder of Diesel engines. The crude oil engine is now definitely under consideration for all types of marine craft. For small vessels the advantage lies in the safety afforded by the use of crude oil as compared with the lighter oils. It is being considered by many of the principal navies of the world for submarine boats and designs are already under way for comparatively large engines for torpedo boats and other similar craft." The Vulecans is then discussed and reference is made to other large vessels using Diesels. Space is given to the discussion of tar as a fuel for the Diesel, the Internal-Combustion Engine Locomotive, the Gas Turbine, the Reliability of the Internal-Combustion Engine, the Humphrey Pump, Utilization of the Waste Heat of the Gas Engine and, finally, a conclusion. The report is a most valuable one and for such engineers as derive their power from oil, and as may wish to keep up with the march of events, we advise that it be immediately sent for. The full title of this paper, and the name of the author are given at the beginning of this discussion of same.

Government's Position

Small Companies purchasing from the Southern Pacific Company and developing faithfully under legal patents prior to the time the President withdrew their lands from settlement or filing on September 27, 1909, will not be ousted by the Government according to a press statement attributed to A. I. McCormick, U. S. District Attorney working on the land fraud cases. Bnt, "those who went in and filed or settled on lands after the date of withdrawal, will be prosecuted." So, finally, the Government's position in this vexatious matter is defined. It should set th hearts and minds of many a worried Honest operator at rest.

It is estimated that the amount of oil consumed on and near Puget Sound is 5,000,000 barrels annually. In one day recently three tank steamers unloaded 156,000 barrels of California crude at different points on the Sound. The Standard, Union and Associated companies all have an established trade at these points, and it is increasing.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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*Derrick's
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The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry, to which it is dedicated, for the promotion of truth and in the aid of progress.

OF INTEREST TO ADVERTISERS

The California Derrick's sworn circulation statement for the year 1911 was 15,000 copies. The number of copies distributed was considerably in excess of 15,000 however, as it is a regular practice to send a certain percentage of each issue to probable subscribers; and as demands for sample copies of the Derrick have never been lacking, our circulation last year ran above 17,000 copies. Our paid, bona fide, monthly circulation averaged 1255 for the entire year. This we considered an excellent showing, considering the limited class of persons to whom we can really appeal—to wit, petroleum chemists, oil companies and field operators, most of whom are supplied with a liberal sprinkling of newspapers; geologists and engineers and lastly business men and investors in oil, the latter class of whom forms a relatively small part of our circulation, which comes from those directly interested in oil.

For the first six months of 1912 the California Derrick's paid circulation totalled 9,420 copies, the average number of copies distributed monthly totalling 1,570, not counting the samples. The monthly gain is therefore 315 copies. This speaks for itself, and it should speak loudest to advertisers. When the present management took over the California Derrick there were but 300 odd subscribers. The growth in subscription we attribute entirely to our efforts to get out a clean, unbiased and in all ways truthful paper, which can be filed on any company's desk for reference in the future, and which will at all times present the best technical and practical information relative to the production and treatment of petroleum procurable. The gain in subscription shows that the oil men do appreciate this policy; and advertisers can judge for themselves as to the value of advertising in a technical journal which is growing as rapidly as the Derrick. In the meantime, if any firm wants the right kind of advertising, the management will appreciate a card to that effect and will be pleased to "show" any prospective advertiser of good standing and reputation.

AMAZING EXPANSION OF MARKET

No more convincing proof could be given to sway the mind of a sceptic to a belief in better prices for oil than the figures showing the production and consumption of petroleum during the first six months of the three years 1910, 1911 and 1912. The growth of the industry as displayed by these figures is amazing, and keeps pace with the growth in the past; which statement is sufficient for the initiated to understand that one year's production record is the succeeding year's year's consumption record. This holds good for 1912, lacking less than a quarter-million barrels. For the first six months of 1911, 40,366,222 barrels of oil was produced in California; for the corresponding period of this year 40,148,086 barrels was consumed. This means that the market for California oils for this year will, if the same ratio is maintained, be almost equal to the production of 1911; in short, that over 80,000,000 barrels will be consumed during 1912! Roughly estimated, this amounts to 12,307,692 tons of oil. We give this ton equivalent merely for the benefit of foreign readers who are accustomed to recording oil in tons rather than in barrels of 42 gallons each and of 306 lbs. weight.

The production for the first six months of this year shows an increase of 3,331,522 barrels as against an increase for the same period during the year 1911 over 1910 of 3,581,848 barrels. The production records for these six-month periods were: 1912, 43,697,742 barrels; 1911, 40,366,222 barrels; 1910, 36,784,374 barrels of oil. Consumption 1910, 32,387,343 barrels; 1911, 34,262,005 barrels; 1912, 40,148,086 barrels of oil. The actual gain in consumption for the first six months of 1912 over the first six months of 1911 is, therefore, 5,886,081 barrels or at the rate of nearly a million barrels per month, which, if maintained, will total close to 12,000,000 barrels consumption gain for the current year.

While production still keeps ahead of consumption the extraordinary efforts being made by the marketers to extend the markets, and the natural growth in the markets due to the increased number of by-products of California oils, the vast saving effected by the use of crude and residuum as fuel, and the constantly increasing demand of the general public for distillates, all assure that unless there is a renewal of activity consumption will soon catch up. It is plain to be seen, however, that with forty-four and a half million barrels in storage it were better for the operator who looks for higher prices not to go after production too vigorously just because the marketers are doing so well in finding a market. It is suggested that pulling a little oil out of reservoirs rather than being forced to construct new storage will quicken the perception of the marketers as to the necessity of a raise in price. If the producers continue to pile up storage they alone will pay for it — by smaller returns for their product. The market conditions are exceptionally promising, however, and a raise for oil at the wells can reasonably be expected if the valiant producer can curb his apparently overwhelming desire to break all records and, thereby, prices; when records are broken upwards, prices break downwards.

HIRAM JOHNSON'S RAILROAD COMMISSION

Never have the people of the State of California been really SERVED until the administration of Governor Hiram W. Johnson began. With this administration the era of justice seems to have been ushered in. Witness for instance what Hiram Johnson's Railroad Commission has done for California; incidentally for the oil man. An administration such as his cannot be too greatly prolonged.

On July 13th, the Railroad Commission rendered its decision by which it lowered the freight rates from Bakersfield, over the Sunset Railroad, owned jointly by the Southern Pacific and the Santa Fe, to the West Side oil fields, and over the McKittrick branch of the Southern Pacific, from 10 to 50 per cent. It found that the Sunset railroad had been almost unparalleled in its earning percentages. It had declared a dividend of 60 per cent in 1910, and another of 100 per cent in 1911.

This is the fourth case in which the commission has made widespread reductions in freight rates. The first involved the rates between Los Angeles and San Pedro; the second concerned the whole rate system in the San Joaquin Valley; and the third affected the Imperial Valley. It is estimated that the saving thus effected for shippers in California will amount to close to \$2,000,000 annually.

In all of these cases the rates as ordered by the commission have gone into effect without legal controversies. In only one case was there an appeal to the courts and decision was quickly given in the commission's favor.

While the sections mentioned have received particular advantage from the reductions made, the decreases have been reflected to every portion of California.

THE SWINGING OF THE PENDULUM

The old clock on the stairs used to make a steady sound, day and night year in and year out, as the seconds rolled into minutes, the minutes to hours, the hours to days, weeks and years. The pendulum swung in accord with the passage of time, backwards and forwards, unvaryingly. That is the way of a pendulum. That is its function. Likewise it is the function of public interest to swing from apathy to frenzy — rarely to show a discriminating appreciation in that which it interests itself. This observation we make merely to call attention to the present public apathy towards oil shares. With the greatest market for oil the world has known and with the vastest oil districts in the world producing world-record outputs, on the eve of the opening of the Panama Canal, which will create such a tremendous market for oil that everyone of the great marketing companies in the State of California are laying in immense

quantities of oil against the opening of the canal, the public interest in good shares is almost dead. We could quote a score of good shares which have not been traded in for weeks. And as far as the outlook is concerned, it should be dazzlingly evident to a blind man that the marketers would not be breaking their necks to get a big supply of oil ahead unless they had faith in the market. The opening of the canal is due in 1913, and it means oil burning ships from Europe to Australia and China; which means oil consumption. The purchase of the Agency's oil by the Union should not be laid at the door of sentiment solely. The recent issue of \$25,000,000 capital stock by the Standard must present some significance to the blindest of minds. The building of the General Pipe Line Company's line from Midway to San Pedro cannot be overlooked as a market indication. The same applies to the Producers Transportation Company's new 8-inch line to be constructed from Junction over the mountains, paralleling its present line. The new refineries, the vast amount of newly invested money by foreign syndicates, the tremendous energy shown by the man inside should forebode something to the stock purchasing public. Apparently it does not. But the pendulum inside the business has already swung from disgust to overworking enthusiasm; and in the very nature of matters terrestrial, the market must follow.

* * * * *

"PETROLEUM MINING"

At last there has been introduced into the curriculum of a great university a special course of study to fit young men to take up more or less responsible positions in the oil industry. The course, which is to cover a period of study extending three years, carries with it the degree of B. Sc., commonly abbreviated in America to B. S. Strange as it might seem, this movement is not fostered by an American College; the University of Birmingham, England is mother to this course of study and our own country, Mother of the Petroleum Industry and far and away the greatest producer, refiner and handler of oils, of all the nations, has no hand in the matter. Perhaps this is due to the many technical courses which fit the student especially for one line and graduate him proficient in it. The courses in chemistry, geology and paleontology, supplemented by the positions that any earnest young man may easily obtain in the oil business in this country, evidently, form the lead American men hold, make the workers vastly superior to the majority of their foreign consins. In short, the College of Experience in this country is the college from which the world's most brilliant petroleum experts have graduated. For this reason it is not likely that the new course will greatly affect the premier position of American oil engineers.

* * * * *

SEABOARD'S BONDS

The Seaboard Oil & Transit Company has authorized an issue of \$2,500,000 worth of twenty-year, six per cent gold bonds, this being subject to the ratification of the shareholders, the same to take place at the meeting to be held in the latter part of September. The purpose of these bonds is manifold: to be used to liquidate indebtedness, to acquire two additional producing properties and bring up production in California through the drilling of from fifteen to twenty-five new wells; to develop the Mexican property and to obviate the necessity of further assessments. The company now has twenty-one producing wells on properties in California aggregating 3,000 acres and one well drilling through a lessor on one of the Mexican properties, while the company's president will soon go to Mexico to personally supervise the drilling of another well which the company will drill directly and thus be entire owner thereof.

Concerning the bonds, the officers state that they have had a bid for \$1,000,000 worth of same from a European syndicate. If the stockholders ratify the action taken by the officers, the two properties under consideration will immediately be taken over, adding 12,000 barrels to the monthly output of the Seaboard. The officers state that it is not their intention to immediately convert the gold bonds into money, by sale, but to sell only such portion of the bonds from time to time as may be expedient and necessary, the bonds to be held in the treasury like so much treasury stock and not on the market drawing interest and thereby depleting the treasury. This plan is similar to that followed by the Union Oil Company, which voted \$25,000,000 in bonds to be used for developing their properties as fast as necessity demanded, selling \$5,000,000 shortly after issuance of the whole, if our memory

serves correctly, the rest remaining to be disposed of as exigencies may demand.

The Seaboard appears to us to have done wonderfully, thus far, for all concerned and we cannot see but that the bond issue is by all means the wisest and best course the company could take. The company's Mexican properties are so well situated that it appears the height of folly not to develop them directly and get the full benefit that follows. We know personally several authorities in nowise connected with the Seaboard who have been on the grounds, which are surrounded by producing wells of large capacity, all of whom say that the properties are excellent. Such being the case it appears very wise to issue bonds for the liquidation of what indebtedness the company may have and for immediate development. It is expected that there will be no opposition to the action taken by the directors since it is plainly for the company's good.

Patent Denied

Samuel Adams, first assistant secretary of the interior, has affirmed the ruling of Fred Dennett, commissioner of the general land office, to the effect that the Southern Pacific Company may not patent oil lands within the primary limits of the grant to the company.

The decision affects lands in two sections of the Elk Hills in the McKittrick district, where the government is seeking to recover 6100 acres of oil lands from the company on the ground that the patents were obtained by fraud. The land in question is comprised in sections 1, 31-24 and 3, 31-24. It is valued at \$15,000,000.

In his decision Secretary Adams says:

"The brief concedes that the mineral lands were excepted from the grant, and only two questions are presented by the case: At what time must mineral character be determined, and what is the necessary character of a deposit to be termed mineral within the meaning of the act?"

"Discovery of mineral character at any time before issue of patent will defeat the grant. *Barden vs. Northern Pacific Railroad Company*, 154 U. S. 288, 329-321.

"As to what is mineral, the court held in *Northern Pacific Company vs. Soderberg*, 188 U. S., 526, 536: 'That mineral lands include not merely metaliferous, but all such as are chiefly valuable for their deposits of a mineral character which are useful in the arts or valuable for purposes of manufacture.'

"It needs no argument to show that deposits of petroleum oil come within that definition of mineral character.

"The secretary was without power to patent the land to the company, for its mineral character exempts it from the operation of the grant, and such mineral character is at least *prima facie* established by its classification as oil-bearing land. Nothing herein will preclude the company, upon proper showing, from right to ask a hearing on a proper notice to show mineral."

The first assistant secretary holds that the discovery of the mineral character of the land at any time prior to the issuance of a patent will defeat the grant. That the company was in possession of the land for many years makes no difference in the eyes of the department of the interior. The company did not attempt to patent the land in question until October 20, 1910, or after the land had been withdrawn as a petroleum reserve.

A Berliner Engine

Mr. Emil Berliner of Washington, D. C., well known in connection with his telephone and other important inventions, has patented a rotary gas engine which has a rotating crank case carrying a cylinder with the ports of the cylinder so disposed as to be uncovered by the piston as it reaches the end of its stroke following explosion.—Scientific American.

Twenty-five wells in Los Hills are producing about 4,000 barrels daily. The Associated, Standard and Producers Transportation companies all have pipe lines into this district.

All the inter-state pipe line companies ordered to file their rates with the Inter-State Commerce Commission, have signified their intention of fighting the Commission's decision by suit.

SUNSET-MIDWAY-McKITTRICK



When the Boston Pacific Oil Company recently opened up its No. 1 well on section 32, 31-24, Midway, for twenty minutes the oil shot over the derrick, and then the well sanded up. A conservative estimate placed the flow at a 15,000-barrel rate. The gravity is 25.2. The day following the flow the bridge was broken and the well is now under complete control and flowing into the sump. It has settled down to a steady production of 3000 barrels.

The oil will be delivered to the Standard. Two 2000-barrel tanks will be erected at the well by the Western Pipe and Steel Company. The Boston Pacific has proved the value of the surrounding territory. The well is on the Buena Vista flat at the north slope of the hills. The oil sand was reached last June and a fine well was promised. Casing trouble followed, and it was not until recently that the well indicated what it would do. The company has had considerable trouble with the hole, which is 3370 feet deep.

The Mays Consolidated has brought in a fine well in its No. 2 on section 28, 31-23, Midway. The oil shot over the derrick for a time but was capped with little trouble. It is now making 650 barrels a day. The oil in the sump tests 26.5 degrees, and as it comes from the well is a little over 27 degrees.

A particularly long string of ten-inch casing has just been landed at 2465 by the California Well Drilling Company in the General Petroleum's well on section 32, 32-24. The well will be finished with eight-inch casing.

The General Petroleum Company, on section 14, 31-22 (old Bear Creek Lease) has two new rigs up and will build four more at once. On the General Petroleum's holding on section 32, 31-24, the California Well Drilling Company will start to rig up immediately. The material is now on the ground.

The Buick's No. 5 well, section 32, 31-23, is down 535 feet. Work just received states the company's new bunk house, completed two weeks ago, has been destroyed by fire.

The Honolulu Consolidated also lost its rig by fire at No. 2 well on section 6, 32-24 just after the well had been completed.

The M. J. & M. Consolidated, section 36, 12-24, is getting a production of from 4500 to 5000 barrels daily from its No. 10 well. The oil is 24.3 gravity. Well came in July 31, at 12,000 barrels.

The Associated's gas well on section 20, 31-23 is still flowing through an open hole, making 8,000,000 feet per day.

On section 34, 31-23, on the south slope of Buena Vista hills, the Associated's well is flowing 1200 barrels daily.

The Midway Gas Company has landed the 10-inch string at 1925 feet on section 14, 31-22. The work is being done by the California Well Drilling company.

Brookshire Oil Company, section 24, 31-22. No. 6 well drilling with rotary, is down 2560 feet, going.

Baltimore Oil Company, section 28, 32-24. Well No. 1 completed at depth of 2710 feet, on beam and indications are that it will produce over 500 barrels daily of 27 gravity oil.

Midway Oil Company, 28, 32-24. No. 1 well now pumping over 500 barrels daily.

Panama Oil Company, section 30, 12-23, have contracted with the American Contracting and Drilling Company to drill their No. 3 well with rotary. Work will be commenced immediately.

Edmonds Midway Oil Company, section 32, 32-24. Active driller No. 2 is down 2010 feet. Active driller No. 3 cemented at 2315 feet. Edmonds Midway Oil Company's No. 1 well on section 32, 32-24 continues to flow 1000 barrels daily.

The Obispo Oil Company, section 32, 12-23, has cemented off the water in No. 2 well at 2184 feet.

K. T. & O. Company's No. 8 well, section 25, 12-24 which

came in July 5th as a gusher and then sanded up is now producing 2500 barrels daily.

Section 25 Oil Company, section 25, 32-23, has twenty-six active and two idle producers. Drilling well No. 38 stands cemented.

Section 2 Syndicate, section 2, 32-23. No. 1 has reached a depth of over 3500 feet. No. 5 cemented at 2481 feet.

Well No. 1 of the Pacific Crude Oil Company, section 32, 31-23, is flowing 7500 barrels daily.

Indian & Colonial Development Company, section 22, 32-23 has sixteen active and three idle producing wells, and an active driller, No. 31, at 410 feet.

Alaska Pioneer Oil Company, on section 32, 31-23 has let a contract to J. F. Ross, who will drill two wells with rotary.

McKittrick Western Oil & Land Company, (formerly Star Light Oil Company), on section 21, 31-22, completed its No. 1 well recently at 840 feet.

Standard Oil Company is building a new camp on the north half of the northwest quarter of section 28, 31-23. This property adjoins the Mays Consolidated on the northwest.

Calidon Petroleum Company, section 19, 31-23, has made the location for well No. 2 and will build the rig at once.

South Midway Oil Company, on section 34, 32-24, has cemented well No. 1 at a depth of 2726 feet.

K. T. & O. well No. 8, on section 25, 12-14, half a mile east of the Lakeview gusher, came in around the first of the month a very big well. Little heard of it since.

A 5000-barrel of light gravity oil was brought in early in the month by the Union Oil Company of California. It is No. 2 well on the McLeod lease, on section 34, 31-23, on the south slope of the Buena Vista range. Preparations had been made for a big well and it was brought in under perfect control. The depth is a little more than 3200 feet.

The Union's new well is on the same section as the Associated's No. 1, which was brought in on May 13 and flowed 5000 barrels daily for several days.

The Engineers' Oil Company, section 14, 31-22, is drilling No. 4 well. Foundation for No. 5 rig is being made.

No. 1 well of the Oakland-Midway, section 13, 31-22, is producing 175 barrels of 21.8 gravity oil.

The Fairfield Oil Company's No. 2 well, section 13, 31-22 is drilling at 1690. No. 3 is rigging up.

The M. Z. Elliott lease, formerly Fortuna, on section 15, 31-22, completed its No. 2 well twenty days ago. It is pumping 100 barrels daily.

The M. H. & M. Oil Company's No. 3 well, section 15, 31-22, has been put on the beam. The indications are for a good well.

The Associated's No. 2 well on section 20, 31-23 developed into a huge gas well. The pressure was so great that the crown block was blown off. The flow at first was 35,000,000 feet per day. The well has been capped and is now under control. It is 2300 feet deep, and is a mile west of the Standard's big gas wells on section 22.

JULY BUSY MONTH FOR WATER FIGHTERS

(Courtesy of Midway Driller)

The Kern County Oil Protective Association reports a very busy month. Deputy Water Commissioner Fleisher, who has charge of the Maricopa end of the field, was present at a cementing or testing job in his territory on twenty-eight days during July, which shows that the present force is pretty well occupied in attending to current work.

Commissioner Forker has been equally busy in the Midway and North Midway fields.

Probably the most interest attaches to the work of Geologist Latham on Twenty Five Hill. Four miles of cross section work has shown that instead of being a Chinese puzzle as has been the general impression, the structure exhibits the same degree of regularity found elsewhere in the field where careful work has been done. In speaking of the matter Mr. Latham said: "We now know what the situation really is. It has been possible to correlate the formation so that future work to remedy present conditions can be undertaken with confidence and can be intelligently carried out."

A meeting of the officers of the companies affected is to be held soon and Commissioner Forker will suggest steps, based on what is now known, to remedy water conditions on the Hill. As far as can be ascertained the companies are entirely willing to take whatever measures are necessary provided they can be assured that such work will be effective.

Now that the situation has been worked out and can be demonstrated, it is probable that an agreement will be easily reached.

New West Side Oil Field Found

A new high-gravity oil field bordering on the Lost Hills and Belridge Company's developments has been discovered by Bakersfield men, headed by Fred Mannell, and the Standard Oil Company is said to have shown its faith in the territory by investing \$250,000 in the land there. Thus far the strike has been kept a near secret, for the oil is said to go 25 gravity. This means the opening up of a field worth millions of dollars if true.

The well, which was drilled as an experiment, is seven miles southwest of the Lost Hills developments and six miles north-west of the Belridge Oil Company's development. It is, like the wells of the two fields mentioned, comparatively shallow, being down less than 500 feet. Further information later.

GENERAL NOTES

The Canadian Pacific Railway has discontinued the use of coal as fuel between Wellington and Albernie, on the "Island Division" and substituted California oil. Same old reasons: economy, through saving in forest fires, labor and actual fuel cost. All the Canadian Pacific's coast steamers are likewise oil burners.

Fifteen miles south of Okotoks, in the province of Alberta, Canada, a promising oil district has been discovered by I. E. Senger, formerly a California oil man, and a boom is on, the biggest oil rush in the history of the west being in full swing.

The Standard's new tank steamer for service between San Francisco and Portland will be launched at Camden, N. J., in a short time. In Western Canada the demand for gasoline has increased 80 per cent within the last year, due to the use of gasoline engines in farming and the increase in automobiles and motor-driven farm vehicles.

Well Supply Notes

Lacy Lands Big Contract

The Lacy Manufacturing Company landed a big job when they got the contract from the General Petroleum Company to build all the company's tanks on their right of way from Midway to San Pedro. This means the construction of twelve 37,000-barrel tanks, one to be located at each of the twelve pumping stations. The Lacy Manufacturing Company states that their ability to "deliver the goods" is what gets them the business — which can be taken as a business axiom.

Lucey Branches Out

The J. F. Lucey Company, which is known now wherever oil well supplies are handled, continues to grow. The latest expansion took place when they amalgamated their foreign interests with those of Messrs. Gillespie & Co., of London, the new firm name being "J. F. Lucey—Gillespie Co., Ltd."

The new firm has been made sole selling agent by the J. F. Lucey Company in all countries outside the North American continent for their various well supplies and will also have the sole selling agency throughout the world of the Parker Rotary. R. L. McCollum, formerly in charge at Coalinga, is to hold a high position with the Lucey-Gillespie Company.

The way the J. F. Lucey Company has grown has been phenomenal. The house was started by Captain Lucey but a few years back and has now become one of the great world supply houses. America, the home of the oil industry and all the allied trades, furnishes continual opportunities for business men and houses of honor and integrity to become world-famous as well as exceptionally prosperous.

CONDENSATIONS

National Pacific Oil Company have a new well of probably 500 barrels capacity on section 36, 12-14 Midway field. Midway Fields Oil Company's well No. 1 making about 500 barrels per day when last heard from. Oil is 27 degrees gravity. Well No. 5 of the Tightwad Oil Company came in recently good for 250 barrels per day, on the beam. The Lakeview Gusher is again to be opened; the rig is now up and work will soon be progressing. According to rumor only. It is said the Honohlu Consolidated, Buena Vista Hills, will soon attempt to run the big gasoline-from-gas plant. Thirty water wells have been shut off from the oil sands since formation of Oil Men's Protective Association last March, in Midway; benefit of same is already being shown by better quality of oils in that district. It is reported that the Murphy Oil Company's properties, in the Whittier Coyote district, are optioned for \$6,000,000. No data as to whom or other particulars. Standard Oil of California has purchased Anchor Petroleum Company's property in Whittier field; same consists of 160 acres. Price not stated. Midway Gas Company's pipe line from Buena Vista Hills to Los Angeles will in all probability be completed by October 1st. It is thought Pacific Light and Power Company will use this gas exclusively in Los Angeles thus displacing their market for fuel oil. General Petroleum Company's well No. 4, section 3, 29-22, Belle Ridge, came in good for 5,000 barrels per day. Buick well No. 4 came in 500 barrels per day and at last reports was making 400 barrels daily. No. 1 is still out of commission. The capital stock of the Standard Oil Company of California was increased from \$25,000,000 to \$50,000,000 July 30. The proceeds of the sale of the new stock will be used in liquidating the present indebtedness of the company to the Standard Oil Company of New Jersey, about \$12,000,000. The remainder will go into the company's development.

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The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Standard Oil Company

Standard Oil Company, section 28, 19-15. Well No. 81 is about 2,050 feet deep; one other well on the north line is near 1,950 feet deep; both wells are through the brown shale. These wells will be drilled into the paraffin sand entered by Well No. 80. Considerable interest is still manifested by oil men in this paraffin sand, as it will in a great measure determine the value of paraffin oil sand underlying the sands that have been producing in that section of the field for the past six or seven years.

United Development Company

United Development Company, section 19, 20-15. Well No. 3 has been cleaned out and is back on production. The boiler plant has been completed, the three 80-horsepower boilers have been fired up and are in good shape and wells No. 1 and No. 2 are producing as usual. On section 17, 20-15, well No. 1 will be recemented, the work being well under way; the rig for well No. 2, located in the northwest corner of the southwest quarter, is completed and ready for the drillers.

Azores Oil Company

Azores Oil Company, section 26, 21-15. Well No. 1 made a small flow one day last week while the workmen were rebuilding the band wheel. The manager had backed up in the well and was making ready to give the hole a thorough test. The work will be completed in a few days when the well will be tried out to determine the quantity of oil in the sand; the gravity is light with a large percentage of lubricant qualities.

Home Company Will Prospect

The Frank Nevins Co-operative Company, comprised of eight oil men of this field, have built a road into their property, section 10, 21-14. The first well will be located in the southwest corner of the section and as soon as the weather cools down the material will be hauled in and a standard rig will be built. The territory is presumed to be shallow; about 500 feet deep.

Marathon Running Yet

Marathon Oil Company, Devils Den, section 13, 25-18. Well No. 2 is 1,350 feet deep, 10-inch casing. The formation at present is brown shale showing oil and gas. Well No. 1 was drilled to 700 feet; work was suspended to take up a new location for well No. 2. The old well was baled out last week and over a barrel of oil was taken out; the oil had seeped in through the shale.

California Oilfields, Ltd.

California Oilfields, Limited, Company is building three new cottages at the main camp, section 27, 19-15, preparatory to starting up new development work during next month. There are about nine strings of tools running on new work, and about five strings are kept busy on old work, cleaning out and re-drilling old wells. On section 21, 19-15, the company is drilling a test well on the south line of the section, opposite the Standard well, and at 1,100 feet have entered a light oil sand making a very good showing; this sand will be thoroughly tested out before going deeper.

Pluto Oil Company's Deep Well a Hot One

Pluto Oil Company section 19, 25-19. Well No. 1 is 3,110

feet deep, 6 1-4-inch casing. Formation, blue shale showing oil, and considerable gas showing through the shale; the bailer dumpings are very hot, and the gas frequently throws out about one-fourth the contents of the bailer before it can be dumped.

Dominion Oil Company

Dominion Oil company, Kings County, section 7, 23-17. Well No. 1 is 2,840 feet deep, 6 5-8-inch casing, 26 pound. Formation, blue shale with occasionally strata of sandy shale, a lot of gas and some oil showing up through the hole full of water.

Hydraulic Drilling company

Hydraulic Drilling Company, section 12, 21-14. Well No. 1 is 1,065 feet deep, 8 1-4-inch casing. Formation blue shale, considerable gas coming up through the water. Well No. 2 is having the pipe tested for water before finishing up. Well No. 3 was cemented off at 363 feet, will be tested shortly.

K. T. & O. Co.

Kern Trading & Oil Company, section 7, 21-15. The well is about 1,500 feet deep, 12 1-2-inch casing. At about 1,400 feet the boulders were very troublesome; at present the hole is in good condition, the pipe is free and going.

Berkeley Coalinga

Berkeley-Coalinga Oil Company, section 2, 21-14. Well No. 3 was completed at 354 feet, has 68 feet of live oil sand; (this is the second sand) the well flows over the casing head, has been hooked up with the pumping plan and is showing up very well.

Baltimore Oil company

Baltimore Oil Company, section 14, 23-18, south end of the Kettleman Hills, has dismantled the rig and derrick. The material is being hauled to Coalinga by Baxter & Murphy and delivered to S. R. Bowen & Company.

American Petroleum Company

American Petroleum Company, section 18, 20-15. The two bunk houses burned last June have been replaced by two cottage bunk houses, up-to-date, a decided improvement over those burned.

Union Oil Company

Union Oil Company, on the northwest quarter of section 4, 20-15, La Vesta well No. 4 is drilling out the cement; the water was shut off at about 3,500 feet during the early part of July with the 6 1-4-inch casing.

Coalinga Midland

Coalinga Midland Oil Company section 10 19-15. Well No. 1 is 1,800 feet deep, 6 5-8-inch casing. Formation, brown and white shale, a little sand occasionally; considerable gas showing with some oil.

Lacey Oil Company

The Lacey Oil Company, Devils Den, section 34, 25-18. Well No. 1 is 1,850 feet deep, 8 1-4-inch casing. Formation, shale with some oil and gas; pipe free and going.

A Report of the Newly Developed Territory of the Coalinga Field

Data Concerning the Number of Wells, the Production and the Transportation Facilities

Written Especially for the California Derrick by
Guy H. Salisbury

One of the most interesting features today in the great oil district of Coalinga is the development of the shallow territory about section 2, township 21 south, range 14 east, M. D. B. & M., lying just back of and over the hill from the much talked of section 6, T. 21 S., R. 15 E. Early in 1909 an effort was made to develop a property on the east line of section 2, T. 21 S., R. 14 E. C. W. Hall, a pioneer oil man of this field, had interested T. H. Thompson, a geologist, who made a thorough examination of the formation through this section. He in turn interested M. C. Hunter, of Spokane, Washington, who organized the Berkeley-Coalinga Oil Company, the pioneer company of this shallow territory, now the center of attention in this great field.

The Pioneer Oil Companies On 2, 21-14

The Berkeley-Coalinga drilled in well No. 1 to a depth of 300 feet. The oil sand when first entered appeared dry, but with a little patient work it soon proved to be a prolific sand. The well has flowed from 20 to 40 barrels per day since the initial flow, increasing as the gas worked through the sand, producing a high quality of oil of 19 gravity Baume, or better. This was the test well of the district. Mr. Hunter's investigation of this part of the field was interesting, in view of the fact that well informed oil men, some of whom had worked on this same ground about seven years ago, were doubtful about the sand producing in paying quantities. Despite this discouragement, Mr. Hunter, who thought well of the territory, organized another oil company, the name of the second being the Spokane-Coalinga Oil Company; men of Spokane, who knew Mr. Hunter backed the enterprise. Well No. 1 of the Spokane-Coalinga was drilled into the pay sand to about 330 feet and the manager was rewarded with a flowing well that has been a steady producer since its initial flow. This second test well convinced those interested that they had a property second to none, in point of profit on the investment.

The writer, who had made a personal examination of this property after development work had been in progress for over a year, was surprised at the extent of the development work and the character of the work done, having known this section since 1906. The low cost of drilling and operating a well, and the high quality of the oil was a surprise. The economical handling of the property is very apparent to a man who has followed the oil business for the past ten years in the fields of California.

The Berkeley-Coalinga's Wells

The Berkeley-Coalinga has three wells completed; another well, No. 4, will soon be finished. The wells are all flowing, but the use of a pump will increase the production at least double, as that has been the experience of this field. The gas from the wells is being utilized about the property, in the cook-house for heat and to illuminate the camp at night. There appears to be sufficient gas from the wells to supply fuel for the drilling of wells and the power plant that will operate the pumping of the wells. Well No. 3 was finished up at 360 feet in 68 feet of live oil sand and arrangements have been perfected for the drilling of wells No. 5 and No. 6.

Spokane-Coalinga's Wells

Spokane-Coalinga has six wells completed; well No. 1 has flowed since it was drilled in. The other wells flow over the casing; no effort was made to increase the production until facilities were available to handle the production. Well No. 5 was finished up at 260 feet, and has 50 feet of live oil sand; well No. 6 was completed with 40 feet of live sand.

Shallow Territory Drilling Requirements

In drilling these wells in this territory two strings of casing are used, the 8 1/4 inch for the water string, the 6 1/4 inch to be carried down into the oil sand and the well finished off with that string of casing; a very economical method of handling that part of the development work. The drilling was first done with a portable rig, while the territory was being tested, but the company is now using the standard rig and is drilling its own wells now that the territory has been determined and the character of the formations is known, thus making another saving in the development department of the property.

The Washington Oil Company

The Washington Oil Company, also operated and organized by Mr. Hunter, has four wells, all flowing over the casing heads. The pay sands in all the wells so far drilled on this property have been from 35 feet to 50 feet thick.

The first sands on these properties outcrop about half a mile to the west; the second sand outcrops to the surface about three miles to the west. The first oil sand on this property is reached at about 160 feet, the second sand at from 300 to 375 feet, according to the elevation of the surface. The geology of the district suggests a third sand at about 1,500 to 1,800 feet. It is understood that the management will drill a test well to pioneer this sand before very long.

Operation of the Properties

These three properties are being operated by Mr. Hunter as one property. The equipment to operate all is simple. A large power plant to handle the pumping wells has been installed; it is situated in the center of the properties, being on the Berkeley-Coalinga, the center property. A cement foundation was laid for the large frame power plant, which has a capacity to handle 70 wells; this power will work the pumps with a Jonas line jack, a very economical method of handling wells where the territory is not too deep. The power plant will be driven by a Reid gas engine, the gas from the wells supplying the engine. A pipe line from the property to the railroad on section 13, 21-14, with loading racks, is under consideration, the gravity fall from the property to the railroad will be 250 feet in one and a half miles.

The company has now more than 5,000 barrels of storage on the property, in galvanized iron tanks, which are all filled. The company will soon have 14 producing wells with a daily average of 500 to 600 barrels. Two of the wells were tested for 72 hours each and the yield was a little over 60 barrels per day. The oil is of a greenish hue, high in lubricant quality, and is used direct from the well to the machinery. On a chemical test the report shows 40 per cent heavy lubricant, 25 per cent light lubricant, 5 per cent kerosene, 5 per cent distillate and 25 per cent residuum. A very competent production man, J. C. Hummel, has charge of the production; he has had considerable experience in handling production for the Kern Trading and Oil Company.

The Spokane-Coalinga has a very fine sulphur water well developed, which is now flowing an excellent water for boiler purposes, because being a soft water, it does not corrode the flues; it is also a very fine water for bathing purposes. The well is a little over 100 feet deep with 18 feet of live sand. This well will be fully developed and will provide sufficient water for the requirements of the property. Water is a scarce product in this section of the field and consequently is quite valuable.

Nearby Operators

There are several companies now competing near this property. On the north, the Potter people, of Los Angeles, are drilling their No. 1 well; the White Creek Oil Company have drilled their No. 1 well very near this property and have a production; well No. 2 is ready to spud in. To the east, section 6, 21-15, there are over ten companies operating, nearly all of which are producers. To the south and southeast, the Hydraulic Drilling Company and the Canadian-Coalinga have good production; the Associated Oil Company, one of the largest California oil companies, is making arrangements to develop its property on section 8, 21-15; the Kern Trading and Oil Company, (Southern Pacific Railroad) is drilling on section 7, 21-15; the Esperanza Land and Oil Company is drilling on section 13, 21-14; The Best Yet Oil Company have a hole 1,800 feet deep on section 18, 21-15. The activity in this section of the field seems to point to the work of development extending farther to the west, as locations have been made and material has been moved in that direction.

(To be Concluded)

EDITOR'S NOTE: A very complete Report on the Coalinga Field as it is today will conclude this article. Those interested in the Oil Industry of California, in economic conditions on this coast, and especially in the Coalinga field itself, cannot afford to miss this important article.

Recent Assessments

Following is a list of oil companies which have recently assessed their outstanding capitalization, giving the number of the assessment, the amount levied upon each share, date of delinquency and date of sale; it will be noticed that certain concerns have levied a very large number of the "dutch dividends", which is only another way of financing a company through the strenuous period:

Acorn Oil Company, Oakland; assessment No. 14 of 10 cents per share; delinquent August 19, date of sale September 10. Anacouda Petroleum Company, Fillmore; assessment of one cent per share; delinquent August 12; sale date August 28. Atlauta Oil Company, Los Angeles; assessment of one cent per share; delinquent August 16; sale date September 16. Bohemian Oil Company, Hanford; assessment No. 11 of one cent per share; delinquent July 17; sale date August 6. Coalinga Unity Oil Company, Coalinga; assessment of 4 cents per share; delinquent July 17; sale date September 2. Combination Midway Oil Company Los Angeles; assessment of 3 cents per share delinquent August 1; sale date August 20. Cosmo Oil Company, Coalinga; assessment of 4 cents per share; delinquent August 12; sale date September 12. G. R. Oil Company, Visalia; assessment of 1 cent per share; delinquent August 14; sale date September 5. Kern Oil and Farm Lands Company, Bakersfield; assessment No. 1 of 2 cents per share; delinquent August 5; sale date August 22. Kettlemon Divide Oil Company, Coalinga; assessment of 1/4-cent per share; delinquent August 7; sale date August 20. Kramer Consolidated Oil Company, Los Angeles; assessment No. 52 of 1/2-cent per share; delinquent August 13; sale date September 10. Kramer Model Oil Company, Los Angeles; assessment No. 3 of 35 cents per share; delinquent July 24; sale date August 14. Marian Oil Company, Coalinga; assessment No. 3 of 10 cents per share; delinquent August 15; sale date September 4. Maricopa Union Oil Company, Los Angeles; assessment of 1 cent per share; delinquent August 6; sale date August 26. Maricopa Visalia Oil Company, Visalia; assessment No. 4 of 3 cents per share; delinquent July 29; sale date August 15. Merchants Oil Company, Santa Maria; assessment of 2 cents per share; delinquent July 31; sale date August 31. Photo Oil Company, Coalinga; assessment No. 9 of 1 cent per share; delinquent July 18; sale date August 5. Pyramid Oil Company, San Francisco; assessment No. 3 of 5 cents per share; delinquent August 19; sale date September 23. San Francisco Midway Oil Company, San Francisco; assessment No. 2 of \$4.00 per share; delinquent August 6; sale date August 28. Santa Maria Midway Oil Company, Los Angeles; assessment of 2 cents per share; delinquent August 10; sale date September 1. Sepe consolidated Oil Company, Los Angeles; assessment No. 2 of 1/2-cent per share; delinquent August 12; sale date September 2. The Vallecitos Oil Company, Fresno; assessment of \$10.00 per share; delinquent July 25; sale date August 10. United Canadian Oil Company, Los Angeles; assessment of 3 cents per share; delinquent August 5; sale date September 5. Walker Oil Company, Coalinga; assessment of 1/4-cent per share; delinquent July 29; sale date August 19.

RECENT INCORPORATIONS

Following is a list of the recent oil incorporations giving the name of the company, date of incorporation, capital stock and the names of the directors, and, as far as ascertainable, the homes of each of the latter:

Anaheim Mutual Oil Company, Los Angeles; incorporated July 9; capital, \$1,000,000; directors, Fred Fette, C. W. Powers, E. W. Howeth, Stephen Holmes, Walter Holmes, all of Los Angeles.

Berkeley Paraffin Oil Company, Berkeley; incorporated July 6; capital \$1,000,000; directors, Geo. H. McKay, Jr., Nau Brunk, Esther R. Brunk Carry Y. McKay, all of Berkeley; A. C. Frederiek, Oakland.

California Selected Oil Estates, Los Angeles; incorporated July 18; capital, \$10,000; directors, Glenn M. Ely W. L. Hargreaves, L. H. Peters, all of Los Angeles.

Coalinga Paraffin Company, Coalinga; incorporated July 3; capital, \$250,000; directors, E. P. Christie, Jennie Odle, J. J. Miller, Chas. F. Lehman, E. B. Farley, all of Coalinga.

Dominion Belridge Oil Company, San Francisco; incorporated July 19; capital, \$300,000; directors, G. M. Dill, N. M. Crosett, San Francisco; W. O. Maxwell, A. F. Gimbal, Oakland; M. A. H. Madison, L. M. MacDonald, C. E. Beck, T. E. Knox, Livermore.

Henderson Oil & Development Company, Los Angeles; incorporated, July 12; capital \$500,000; directors, E. E. Henderson,

Frank P. Gable, Geo. F. Wheeler, Jas. R. Colgan, W. F. Wilson, all of Los Angeles.

Manuel-Minor Petroleum Company, Bakersfield; incorporated July 9; capital, \$200,000; directors, F. E. Manuel, T. H. Minor, Gus Seabamblin, Bakersfield.

Mecca Oil Company No. 2, Jersey City; articles filed July 9; capital \$100,000; directors, Wm. H. Carey, Jno. H. Patterson, Chas. J. Gormley, New Jersey.

Midway Maple Leaf Oil Company, Reno, Nevada; articles filed July 8; capital \$10,000; directors Jos. Sutcliffe, J. R. O'Brien, Hein Goldman, Louis Hagan, L. E. Kelly, all of San Francisco.

Miocene Oil Company, San Francisco; incorporated July 5; capital, \$20,000; directors A. J. Pollack Jas. P. Sweeney, B. Hastings, all of San Francisco.

Mono Lake Oil & Mining Company, San Francisco; incorporated July 3; capital \$1,000,000; directors, J. M. Silver, G. Ruhl, San Francisco; C. M. Wilson, Mono Lake.

Olympian Oil Company, San Francisco; incorporated July 15; capital, \$1,000,000; directors A. C. Eisen, Benj. Mendoza, F. L. Berry, Chas. J. Parks, San Francisco; Goodwin B. Swift, Berkeley.

Pentland-Union Petroleum Company, Bakersfield; incorporated June 29; capital, \$1,500,000; directors, B. M. Howe, Maricopa; Geo. C. Haldeman, Los Angeles; W. B. Beazley Bakersfield.

The Missouri-Inglewood Oil Company, Los Angeles, incorporated July 18, capital, \$3,000,000; directors, Andrew M. Strong, R. Glaspey, Geo. B. Bush, Fred E. Peterson, E. J. Bordeaux, Wm. H. Richardson, J. W. Hinkle, Los Angeles.

W. V. F. Oil Company, Visalia; incorporated July 1; capital \$200,000; directors, W. G. Van Slyke, J. N. Young, A. D. Willson, J. W. Fewel, all of Visalia.

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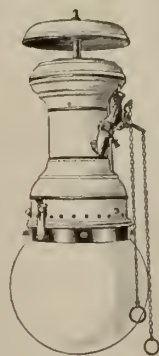
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SANTA MARIA

Written Especially for the California Derrick by
EDWARD MORRIS

Palmer Union Oil Company

Palmer Union Oil Company succeeded in getting No. 1 in shape after having drilled down to the old bottom. The well is now pumping 500 barrels daily. This well is known as the famous Palmer gusher which has been dormant for over a year and the renewed activity shown is evidence that the sands were not played out at the time of its stopping but that the theory of plugging up is correct. The Palmer has three wells now producing and is in much better shape than for several months past.

Pinal-Dome Oil Company

Dome Oil Company has spudded in No. 14 in the main field. The site for this well is close to the Rice Ranch line and should develop a good producer from the record of surrounding wells such as Rice Ranch No. 8 and Dome 11. This is in accordance with the policy of several of the companies in the old field to drill up the tracts which were largely shelved in the excitement following the Cat Canyon gusher fever, and many of them are returning to the old field to get increased light oil production. The Dome Wickenden well near Los Olivos is to be put on the pump. Little is known of this well except that it has shown good prospects of becoming a substantial producer. The Dome has recently joined with the Pinal Oil Company under an amalgamation known as the Pinal-Dome Oil Company. The preliminaries have not been completed and both companies are as yet acting individually.

Santa Maria Oil Fields, Ltd.

Santa Maria Oil Fields, Ltd., is rapidly attaining its goal as a large producer and marketer of fuel oil in the Cat Canyon region. Four wells are now producing approximately 2000 barrels daily and the output is in shape for the immediate shipment via the company's own railroad, the Santa Maria Valley. This company was purchased by the English syndicate now owning it from the Palmer Annex Oil Company and a large amount of money was spent before any of the wells were brought in. During the past six months the Los Alamos well has kept up a steady gait of 1,000 barrels daily and very recently wells 2, 6 and 7 were added to the list. The company has made no contracts for its product but is delivering on the open market.

Santa Maria Oil Fields Syndicate

Oil Fields Syndicate on the John Bell tract cleaned out No. 1 in an effort to stimulate the production and carried down the 8 inch pipe to bottom. Since this operation the output has increased to 300 barrels daily and the oil has greatly improved, now testing 24 gravity. The remarkable feature of this well is that it is commonly considered in the Cat Canyon area but the character of oil produced is in no way similar. This is the property recently purchased by W. P. Hammon of San Francisco for the British Syndicate and plans for an extensive development campaign are under way.

Union Oil Company

Union Oil Company is making strenuous effort to get Bell No. 5 in shape to resume producing, but owing to the enormous gas pressure against which it has to be worked, only slow progress is made. Whenever the tools are raised in the hole, the gas shoots the oil high over the derrick and any attempt made to cap the hole has failed to date. From these indications it is evident that its old gusher rate can be expected when the block is set to control the flow.

In the old field the Union brought in an exceptional well on the Newlove tract. No. 37 is located in the center of an heretofore undeveloped area and the well registered an initial production of 2000 barrels of 25 gravity oil daily. This has been reduced to a steady average of 1200 barrels which can be relied on from every indication to date. It is probable that several additional wells will be drilled in at an early date to thoroughly test out the locality.

Rice Ranch Oil Company

Rice Ranch Oil Company in the old field is drilling No. 10 at 2500 feet with 10-inch casing. This well is close to No. 8 and should tap the same oil bearing strata. No. 11 is spudding in surface formation. The Purity Gasolene plant operated on this property recently installed two Bessemer compressors of 80 h. p. each and will begin marketing gasolene from natural gas about September 1st. The gas production of the Rice Ranch is 2,000,000 cubic feet daily and the plant is equipped to handle the entire amount.

Bradley Canyon Oil Company

Bradley Canyon Oil Company is making good headway with No. 1 back of Fugler's point, after having met with slow drilling in the earlier strata. The well is in good shape and the showing of sand at 470 feet is indication that the territory is shallower than any yet discovered in the Cat Canyon field.

Princess Oil Company

Princess Oil Company has resumed work in the Tepusquet. The well is down close to 3000 feet with 8-inch casing and a big gas showing is encountered at this depth. On the Muscio tract the well is down 3400 feet. This well is similar to that of the Dome Wickenden in that it has shown large potentiality but owing to present conditions the oil has not been brought to the surface in an estimatable form.

Carranza Oil Company

Carranza Oil Company has been recently incorporated by San Francisco capitalists headed by Rudolph Spreekels to operate the R. B. Canfield Ranch near Los Olivos. Nearly 5000 acres were secured for development and the first well has been spudded in close to the Foxen Canyon road. Although the success of the Oil Fields Syndicate is promising of good results on the Carranza lease, the development is purely wild cat and the territory will have to be thoroughly tested before it takes on the attitude of a new field.

New Pennsylvania

New Pennsylvania Petroleum Company in the old field is again drilling in No. 7 after the layoff following the cement job at 1900 feet where the 10-inch was landed. The hole when tested was free from water and should be continued down to the oil bearing depth with the 8-inch pipe which is now being used. This well is on a line between No. 6, one of the finest producers in the old field, with a steady production of three years and Rice Ranch No. 8, a new well producing 500 barrels daily. The regularity of the formation is unquestioned and with careful drilling No. 7 is scheduled to become a good well. The Fugler well is getting a 200 barrel production of fuel oil with the aid of circulating light gravity oil to stimulate it and from day to day shows a gradual improvement.

Los Flores Land & Oil Company

Los Flores Land and Oil Company is drilling No. 4 along the north line of the property within 300 yards of the big Los Alamos gusher. Although nearly \$250,000 has been spent in the development work on this property without results, it is probable that this final venture will meet with success owing to the showing of its near neighbor, which is considered a sure indication. The well is 1100 feet with 10-inch casing.

Merchants Oil Company

Merchants Oil Company has resumed work and is now drilling up lost tools at 2500 feet in an effort to get the hole in shape to drill further. The company has good oil indications.

Coblentz Oil Company

The Coblentz Oil Company is making good headway with its well in the old field on the tract adjoining the New Pennsylvania. This well is within 600 yards of New Pennsylvania No. 6 and has shown similar formation up to date. An effort will be made to carry the 6-inch casing to completion as the 4 1/2-inch string, originally proposed to be put down, has been laid aside to allow for the larger pipe.

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Latest Quotations on the San Francisco Stock Exchange

As usual in summer, especially during the recognized vacation months, interest in stocks seems to have sunk greatly. For instance: Amalgamated is now less in demand in this city and the price bid has dropped \$5. since our last issue. Associated is stationary at \$43. at which price it is changing hands in small lots only. In the south, that is, on the Los Angeles Exchange, matters are much livelier. The one event of paramount interest as we go to press is the activity of Mexican Petroleum, preferred, of which 65 shares changed hands at the record price of \$101. This is more noticeable as no other \$100. oil stock listed in California has gone above par, it is said, for more than a year. The trading in small shares is like the shares—small. The extraordinary gains of consumption on production, however, must inevitably produce better times all around, as it is deemed impossible under existing circumstances that prices should not rise in the early future for oil at the well, and that will show directly in the stock market activity, which of course, follows in the wake of field conditions and prices. Following is the list of stocks recently quoted on the San Francisco Stock Exchange:

COMPANY	BID	ASKED
Amalgamated Oil	\$ 70 00	\$
Associated Oil Stock	13 00	43 25
Brookshire	40	.....
Caribou	70	.....
Claremont	60	.....
Coalinga Central	20	.....
Coalinga Mohawk	46	.....
De Luxe	60	.....
Empire	60	.....
Maricopa 36	40	.....
Midway Premier	1 30	.....
Monte Cristo	.....	1 40
New Pennsylvania Petroleum	55	.....
Paraffin	.....	50
Palmer	42	.....
Premier	40	45
Sauer Dough	1 20	.....
Section 25	22 50	.....
Silver Tip	65	75

Sovereign	.....	15
S. W. & B.	20	.....
Turner	80	90
West Coast (pref.)	70 00	100 00
W. K. Oil Company	2 00	2 25

Following are the latest quotations on the Los Angeles Exchange; the list showing that much more interest is displayed there than here:

Los Angeles Quotations

COMPANY	BID	ASKED
Amalgamated Oil	\$ 70 50	\$
American Crude Oil Company	.....	30
American Petroleum Company (com.)	49 00	49 25
Associated Oil	42 75	43 00
Bear Creek Oil & M. Co.	.....	65
Brookshire Oil	.....	35
California Midway Oil Company	18	24
Central	1 05	1 40
Columbia	1 11½	1 15½
Continental Oil	.....	35
Enos Oil Company	02 7½	07 ½
Euclid Oil Co.	.....	37 ½
Fullerton Oil	2 75	4 00
Globe	01	07
Jade Oil Company	.....	16
Maricopa Queen Oil Company	.....	30
Maseot Oil Company	.....	75
Mexican Petroleum Ltd. (pref.)	101 00	101 50
Mexican Petroleum Ltd. (com.)	68 00	68 50
National Pacific Oil Company	03	03½
Nevada-Midway Oil Company	.....	15
Olinda Land Company (Oil)	39	.....
Palmer Oil Company	.....	45
Pennsylvania Midway Oil Company	07¾	.....
Rice Ranch Oil Company	1 18	1 26
Trader's Oil Company	70 00	77 50
Union	99 37½	99 62½
Union Provident Company	98 87½	99 25
United Petroleum	99 00	99 50
United Oil Company	27

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The Mexican Oil Fields Today

Situation in the Oil Districts as Regards Revolutionists and General Oil Outlook

Written Especially for the California Derrick by Allen G. Nichols.

In spite of the comic opera insurrection that has been going on in certain portions of Mexico, developments in the oil field are extremely rapid, and so far, there has been no trouble in that portion of Mexico in which developments are going on. In fact, in the States of Coahuila, Neuva Leon, Tamaulipas, and the northern part of Vera Cruz, there have never been any disturbances whatever. It is extremely doubtful whether the native population would not offer armed resistance to an invasion of their own people from whatever cause, if they were convinced that it would disturb the present more than pleasant relations with foreign capital. That is to say that the native workmen of whom there are several thousand employed in the fields, realize that their present earning capacity, with its resultant food and clothing of which they never had a sufficient supply up until the advent of the "gringo", is the direct result of the opening up of the oil fields by foreign capital.

Several of the larger oil companies have schools, hospitals and supply stores where the natives can obtain so many of the necessities of life they were formerly deprived of. Great numbers of the natives are being educated in the companies' schools and the shops are turning out a large number of native mechanics and they, as soon as qualified, earn the same wages as the imported mechanics. These people are not slow to learn that their interests are, and must be, identical with those of the companies who are developing the oil industries of Mexico.

Big Developments of Recent Date—Mexico Awake

Within the past four or five months there have been very many important developments in the oil field proper. Transportation facilities are being provided very rapidly. It is true that nature, to a great extent, provided these facilities by water transportation, but shipping stations have had to be built and storage has had to be provided. All along the Panuco River, from La Barra to El Caracol, tanks and loading racks are being built as rapidly as men and money can do the work.

Starting at the mouth of the Panuco, on both sides of the river, the Mexican Aguila Oil Company, locally known as "Pearsons", are building a large number of steel tanks. On the Tampico side of the river they are also preparing to build and in fact have started construction on a very large refinery that will be run in connection with the other two refineries that the same company already have in the Republic of Mexico. They have completed a pipe line to this point and from there to the Potrero well, the world's greatest gusher, and have forty or fifty steel tanks already completed. It is reported that the number will be increased to one hundred as fast as the work can be done. Just up the river between

this point and Tampico, the Waters-Pierce Company are constantly adding to the capacity of their refinery as well as increasing storage facilities.

On the other side of the river in the State of Vera Cruz, the Huasteca Petroleum Company are still building steel tanks at the rate of slightly more than two per week. They already have a storage capacity of approximately six million barrels and the end is not yet. They have two pipe lines completed to this point from Juan Casiano and are delivering oil at the rate of nearly thirty thousand barrels per day. The pipe line extends under the river to a loading rack on the Tampico side, and from there a large amount of oil is loaded each day on cars, which oil goes to the National Railways of Mexico under contract, while a certain amount is also shipped to Ebano for storage at that point.

The Texas Company

The Texas Company, on their one-thousand-acre tract, nearly opposite the City of Tampico, already have up three large steel tanks and their wharf is nearly completed. They are shipping two or three steamers loaded with oil each week to gulf points of the United States; to Galveston, Port Arthur, New Orleans and Mobile.

International Petroleum Company

The International Petroleum Company have secured a tract of land on the Panuco River above the city of Tampico, and have already completed two large steel tanks. Their wharf is under construction and they will be prepared to ship oil in the very near future.

East Coast Company

Above this point at the place where the new Brownsville-Mexico cut-off will cross the river, the East Coast Company have purchased one thousand acres of land and are building a large shipping plant. They will be prepared to load oil direct either on ships or cars, and a large force of men is already at work at this point. A pipe line is being built from Panuco and Topila to this station and it will be only a short time until oil is flowing through the line. Primarily, it will be used for their own production at Panuco and Topila, but it is likely they will become a purchaser of crude oil from surrounding producers.

Tampico Oil, Ltd.

Further up the river at El Caracol, the Tampico Oil, Ltd., have leased a tract of land from the Tampico Fruit Company and will build a pipe line from their new gusher at Laguna de Tamos to deep water transportation on the river. This line

will be some four and a half miles long and there are already over eight hundred tons of eight inch pipe on the ground.

Field Development in the Panuco-Topila Region

Development in the field is progressing very rapidly, especially in the sections around Panuco and Topila and between those points. There have been several new wells brought in at each place but within the past two or three months the record at Panuco seems to be slightly better than at Topila. No wells have been brought in at the former place to equal the East Coast No. 2 at Topila as yet, but the general average of the wells is somewhat higher in point of production.

The last big well to come in at this point is East Coast No. 3, which came in a gusher on August 23. It is variously estimated at from two to eight thousand barrels per day, though connection with pipe line has not yet been made and there is no way to measure the flow, but the well is probably good for at least three thousand barrels per day, and if it increases in the same proportion as do the other wells in that section, will probably be good for at least thirty per cent more at the end of a year.

So far, there have been some ten wells completed in this immediate section covering a tract about two miles long. They will average in the neighborhood of six hundred barrels per well. On the other hand, the same number of wells at Topila cover a tract about one mile long and seven of them are good wells. Two are wells of about one hundred barrels and one is so far a failure from mechanical causes.

At Topila there are two wells just being completed; both are in oil and both give promise of being good wells. One belongs to Milliken and one to the East Coast. The Tampico-Panuco Oil Company are also expecting to bring in a well in the near future in the same district.

Topila Petroleum Company

The Topila Petroleum Company, well No. 1, principally owned by Los Angeles capital, is still keeping up its spectacular performance. It flows every hour and forty minutes and the performance lasts eleven minutes. The well is completed with an eight inch pipe and the gas pressure gradually raises the fluid in the hole until the flow starts. After about eleven minutes, the flow ceases and the fluid level, after the flow, is about five hundred feet from the surface. The company expect to put in a liner in an endeavor to make the well flow steadily, which will undoubtedly increase its production very materially. They have completed a 37,500 barrel tank which is more than half full of oil. A loading rack has been completed on the river and within a very short time regular deliveries will be made through the pipe line on the contract that is already signed. This company has a considerable acreage at this point and will probably bring in a number of wells in the near future. (Editors note: This is a Spellacy Company).

The Scottish-Mexican well No. 1 is completed and is giving a steady production. This company also contemplate putting down several additional wells at this point. The East Coast are now completing No. 4 and No. 5. No. 4 is in oil and No. 5 will probably be completed within the next forty or fifty days.

Seaboard Oil and Transit Co.

Between Panuco and Topila on the Paso del Potrero tract of the Seaboard Oil and Transit Company property, the Swain Syndicate, who hold a five hundred acre sub-lease, have completed a heavy standard rig; a complete outfit of tools, machin-

ery and pipe are now on the way from New York to Tampico. This company already had one well started that was several hundred feet deep but the rig proved to be too light for the services demanded of it and the company decided to put in the heavier tools. Work will be pushed here as rapidly as possible and it is expected that the well will be completed about the first of the coming year. This section is being very closely watched by those interested in the Mexican fields and it is fully expected that it will connect the Panuco and Topila fields. It is practically in the center of the basin in which are located the Panuco, Topila and Tamos groups of wells. There are several oil seepages on the property and hundreds of seepages of gas in both the Panuco and Topila rivers on both sides, and it is confidently expected that a well drilled almost anywhere on the property will prove to be a good producer.

Big Well at Laguna de Tamos

At Laguna de Tamos the seventeen hundred barrel gusher of the Tampico Oil Ltd., is still keeping up its regular rate of production, with the slight daily increase that is characteristic of the Mexican wells. This is a feature of the Mexican wells that is a source of constant wonder even to oil men. Almost every well in the field has produced more oil at the end of the first year than it did when brought in.

Mexican Premier Oil Company

In the southern fields the Mexican Premier Oil Company have had a splendid showing of oil in their new well now going down on the Soledad Ranch, and there seems to be every indication that the well will be finished within the next few hundred feet. There are several other new wells going down in that section. One at Tenaja and one at Tres Hermanos and preparations are being made to drill a well on Idol Island in Lake Tamiabni.

That Frightful Mexican Tax on Oil

Considerable discussion has been heard in Mexico for the past few months regarding the proposed tax on oil to be levied by the Mexican Government. This tax is in the nature of a war tax; but it is in fact a bar charge, or harbor charge. It is understood that the tax will be 20 cents in Mexican currency, per ton, or about 3 cents Mexican per barrel. It is considerably less than the bar tax paid on other commodities. The tax on lumber, hardware and machinery, for instance, is \$1.00 per ton either inward or outward bound, and while there is some dissatisfaction expressed, it does not seem by any means an exorbitant tax. There was at one time a scheme on foot to tax oil in storage but by representation of the oil men this tax has been remitted.

Government's Position Regarding Investment

The Government seems to be inclined to offer every inducement and protection to the investment of legitimate capital. They seem to realize that it is absolutely necessary if the country is to be developed that it be done by foreign capital, and once the present insurrection is put down, there appears no reason to believe that Mexico, or rather at least the oil business of Mexico, is not due to experience a tremendous boom. It is certain that it is the greatest partially developed oil field in the world. There are at least two or three wells that are wonders; among them the Juan Casiano No. 7 has now producing for practically two years and the rate of production today is slightly more than when the well came in; it will be of undoubted interest to many to know that nearly fifteen million barrels of oil have been saved from this one well.

Extending Mexican Oil Pipe Line System

Our contemporary, the Oil, Paint and Drug Reporter, under date of September 2d, says: "The Transcontinental Petroleum Company, which is said to be subsidiary of the Standard Oil Company, has been granted a concession by the Federal Government for the construction of an extensive system of oil pipe lines in the States of Vera Cruz, Hidalgo, San Luis Potosi and Tamaulipas. It is also given the right to make extensive oil explorations in these States. Under the terms of the concession is allowed to import all material for its use free of duty, and its holdings are exempted from Federal and State taxation for a period of ten years. The company is making surveys for its proposed pipe line system which will extend from the different oil fields to Tampico, Vera Cruz, Tuxpan and probably to the City of Mexico and other towns of the republic. It will also start several rigs at work boring for oil upon land that is under lease. The government requires

that a faithful and accurate record shall be kept by the company of the geological formations that are passed through in drilling each well, and that it be immediately notified when oil is struck.

The East Coast Oil Company has brought in another well in the Topila district. It has a flow of about 3,000 barrels per day. The production of this company is delivered to the Texas Company and is exported to Texas.

It is shown by actual test that the well which S. Pearson & Son, Ltd. brought in recently near Tauquichiu now has a daily flow of more than 60,000 barrels and that the output is constantly increasing.

Mexican Premier Gets Big Well

The Mexican Premier Oil Company has brought in another well of the gusher type at its Soledad camp. The flow is more than 1,000 barrels per day.

California Production for and Field Operations During July, 1912

July's production, as compared with that of June, was practically stationary. While there was an increase for the month of 215,046 barrels, this was due to the extra day; the daily average production in July was actually smaller than in June, the respective daily averages being: June, 244,857; July, 243,895 barrels, there being evident a falling off of approximately 1,000 barrels daily. The gross productions for the respective months were: June 7,345,702 barrels; July 7,560,748 barrels of oil.

Daily Averages

On daily averages, which is the truest test, the relative production of the fields show conditions as follows: Kern River, average daily loss, 755 barrels; McKittrick, average daily gain, 1,011 barrels; Midway, gain, 937 barrels; Sunset, loss, 218 barrels; Coalinga, loss, 956 barrels; Watsonville, stationary at 120 barrels; Lompoc, gain 385 barrels; Santa Maria, loss, 693 barrels; Summerland, loss, 4 barrels; Santa Paula, gain 69 barrels; Newhall, loss 11 barrels; Salt Lake, loss 1096 barrels; Los Angeles, loss 23 barrels; Whittier-Coyote, loss, 29 barrels; Puente, gain 1 barrel; Fullerton-wrea-Canyon, gain 464 barrels; Lost Hills, loss, 44 barrels daily. These figures, showing the daily losses and gains, (the losses predominating) make it evident that the production is being curtailed as far as possible by Independent Agency companies, if by no others. The incentive, fortunately, is lacking; if a much higher price were to be offered at present it is to be feared that operators would respond immediately in a manner to cause a big drop in price; although it may truthfully be said that considerable restraint and common sense is being shown at present and has been in evidence for many months past.

Operation Figures

Bearing out the statement of a tendency to curtail, the operation figures show to what extent the tendency prevails. For instance, but five new rigs were completed in Coalinga in July as against 15 in June; Kern River completed 5 rigs in July as against 9 in June; McKittrick completed 10 in July to 12 in June, but Midway showed a big activity in July as compared with June, for some of the bigger corporations have been very active of late. In Midway the gain for July over June was 11; figures, June 19, July 28 rigs completed. Not

to go further into detail, to show the seeming curtailment the gross figures are the best evidence. The total number of rigs completed in July was 69 as against 81 in June.

Wells drilling show a drop of 20: From 428 to 408, there being ten strings less in Midway, three fewer in Sunset, six less in Santa Paula, and little variation elsewhere. In this connection we beg to correct an error that crept into our last month's table: A "1" was dropped from the Midway number of wells drilling, making the figure "33" instead of "133". Persons who take an interest in and follow carefully the figures of each field, undoubtedly experienced no trouble in locating the trouble, but to an outsider it would be a puzzle.

The number of producing wells was increased from 5,458 to 5,518; gain, 60 wells. Completions during the month numbered 64; thus either four of the new wells are not being operated or are off production. Of the completed wells 22 were in Midway, 11 in Coalinga, 9 in Kern River, 6 in McKittrick and the remainder well scattered out over the various districts. Nine wells were abandoned: 3 in Newhall, 4 in Salt Lake, 1 in Kern River and 1 in Sunset.

Consumption and Surplus

Consumption showed a small apparent gain in July, over that of the previous month. The apparent gain is 64,187 barrels; but the daily average sales or shipments, otherwise known as "consumption", dropped from 230,605 barrels to 225,256 barrels, thus making an actual daily loss for the month of 5,369 barrels, a total real loss for the month of 166,439 barrels. Also, the disparity between daily average production and daily average consumption increased from 14,232 during June to 18,639 barrels during July, which brought up the total monthly surplus from 426,643 barrels in June to 577,802 barrels in July. The proof of this lies in the final figures; total surplus June 30, 1912, 44,444,658 barrels; surplus for month of July, 1912, 577,802 barrels; total surplus in storage July 31, 1912, 45,022,460 barrels. The greater proportion of this storage is undoubtedly fuel oil since the refining oils are almost immediately run to and treated by the Standard, the Union and the smaller and lesser known refining companies in this State.

Following is submitted the regular table giving in detail all the operations in the various fields for July:

County	Rigs Comp.	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month
Kern River	Kern	5	3	1,637	9	1,058,805
McKittrick	Kern	10	12	220	6	581,840
Midway	Kern	28	123	665	22	2,129,646
Sunset	Kern	2	30	252	4	475,106
Coalinga	Fresno	5	73	855	11	1,617,156
Watsonville	Santa Clara	1	1	5	.....	3,720
Argoyo Grande	San Luis Obispo	1	.....	.....	.....	.....
Lompoc	Santa Barbara	3	24	24	.....	102,150
Santa Maria	Santa Barbara	2	27	168	1	4,85,688
Summerland	Santa Barbara	1	1	122	.....	5,450
Santa Paula	Ventura	3	24	297	4	67,816
Newhall	Los Angeles	3	3	78	3	10,662
Salt Lake	Los Angeles	1	13	283	2	218,583
Los Angeles	Los Angeles .....	.....	.....	406	.....	34,750
Whittier-Coyote	Los Angeles	16	16	146	3	87,277
Puente	Los Angeles	1	1	56	.....	2,510
Fullerton-Brea-Canon	Orange	4	50	272	1	562,297
Lost Hills	Kern	9	25	32	1	117,292
Salinas Valley	San Benito and Monterey	2	.....	.....	.....	.....
Repetto	Los Angeles .....	.....	.....	.....	.....	.....
Totals .....	.....	69	408	5,518	64	9
						7,560,748

Summary

	Barrels.
Stocks, June 30, 1912	44,444,658
Production, July, 1912	7,560,748
	52,005,406
Consumption, July, 1912	6,982,946
	45,022,460
Stocks, July 31, 1912	45,022,460
Daily average production	243,895
Daily average consumption	225,256
Daily average surplus	18,639

NOTICE

Owing to the fact that the "California Derrick" did not receive this month the regular monthly report of the United States Government on **Exports**, we are forced to go to press without this usual feature. We hope to give these figures for the two months, in the next issue of this magazine. It is

probable that the Postal Service is responsible for the loss of this department this month.

Lost Hills and Belridge Productions

The present output of the Lost Hills field is 4,000 barrels a day, produced from twenty-five wells. The Belridge district is producing about 5,000 barrels a day from thirty-eight wells.

Recent Research Work and Publications of the United States Geological Survey and Bureau of Mines

Important Features of Dr. David T. Day's "Production of Petroleum in 1911"

INTRODUCTION

(By David T. Day)

The output of crude petroleum in 1911 exceeded the previous maximum in 1910 by 10,892,143 barrels, or more than 5 per cent. In 1911 the production was 220,449,391 barrels, and in 1910 it was 209,557,248 barrels.

The total production of the world also surpassed all records, amounting to 345,512,185 barrels, or 46,526,334 metric tons. Of this the United States produced 63.8 per cent, or almost two-thirds.

This maximal production carried with it many features unusual in their interest to the public. The increase was caused chiefly by the gain in California, unwelcome to everyone and impossible to prevent, even after earnest effort to limit the production. The efforts to extend California's consumption were partly successful, and although the stock there increased to 44,000,000 barrels, it is to be realized that this quantity is little over a half-year's supply. Another factor in the increase was the discovery of a saline dome at Vinton, La., which ran the eccentric course that is one of the characteristics of these domes. The Caddo oil field also grew in importance and was scarcely less eccentric than Vinton.

A find of high-grade oil at Electra, in northern Texas, became important at the end of the year. The extension of the Oklahoma fields well into Osage and Pawnee counties, and the discovery of oil still farther west in Kay County substantially increased the mid-Continent yield.

All these increases in the Mid-Continent fields were offset by the declines in Illinois and in States farther east. In short, fuel oils increased and refinery oils declined.

Another feature whose influence is being felt in 1912 was the increase in transporting and refining capacity and of export demand, which in spite of the increase in production led to a drain on stocks in the Mid-Continent fields. The inevitable result of this situation has been the general increase in the price of crude oil for refining.

The fact that, with an increase in total production of 10,892,143 barrels, prices increased at the end of the year is a paradox which manifests the statistical necessity for an analysis of this total production in order to show the real elements of use which these various oils can yield. In general, the three commodities of general market value which should be considered in regard to these crude oils are gasoline, kerosene, and residuals suitable for fuel in the West and for lubricants and wax in the East. In the trade, "naphtha" is a name generally applied to groups of oils lighter than kerosene as distilled from the crude, but to the public "gasoline" is the name for the light fraction suitable for internal combustion engines, and in fact when crude naphtha is redistilled it is for the most part separated so as to yield gasoline and lighter or heavier kerosene. Here let it be remarked that the demand for gasoline has become so imperative and this product is salable that little or none is now allowed to lower the safety of lamp oils. The latter have, therefore, greatly improved in character. The actual need of State inspection of lamp oils has greatly decreased, until the position of local oil inspector has sunk to that of a political sinecure, the money involved in which might be spent with greater general benefit in enforcing the State laws for the conservation of oil and gas deposits.

ACKNOWLEDGEMENTS

(NOTICE: Reference to Dr. Day's "Acknowledgements" will be found in another column of this magazine.)

PRODUCTION

The statement of the production of petroleum in 1911 is given in detail by states in the table which follows:

	Quantity	Value	Av. Price
		Per Barrel	
California	81,134,391	\$38,719,080	\$0.477
Colorado	226,926	228,104	1.005
Illinois	31,317,038	19,734,339	.630
Indiana	1,695,289	1,228,835	.740
Kansas	1,278,819	608,756	.476
Kentucky	472,458	328,614	.696
Louisiana	10,720,420	5,668,814	.529
Michigan			
Missouri	7,995	7,995	1.000
New York	952,515	1,248,950	1.311
Ohio	8,817,112	9,479,542	1.075
Oklahoma	56,069,637	26,451,767	.472
Pennsylvania	8,248,158	10,894,074	1.321
Texas	9,526,474	6,554,552	.688
Utah			
Wyoming	186,695	124,037	.664
West Virginia	9,795,464	12,767,293	1.303
Total	220,449,391	\$134,044,752	\$0.608

Rank of States

California not only led in quantity of product but produced almost half again as much as Oklahoma, the State second in rank. The Mid-Continent field omitted, California produced as much oil as the rest of the United States put together; the United States being omitted, California produced more oil than any entire nation; and if Russia and the United States are omitted, California far surpassed the combined production of all the rest of the world, including Mexico, India, Roumania, Galicia, Japan and South America.

The rank of the States is easily remembered when one recognizes

California, Oklahoma, and Illinois as forming a class by themselves, the lowest (Illinois) producing over 30,000,000 barrels, and the three furnishing three-fourths of the entire output. The second division includes Louisiana, West Virginia, Texas, Ohio, and Pennsylvania, in which Louisiana furnished a surprise by giving the greatest product on record for that State and passing to the head of the second division, above West Virginia, Texas, and Ohio, while the slight gain from two pools in Texas put that State in advance of Ohio again. In the third division the largest state production is less than a fourth of the lowest in the class above, and combined these states produced less than 2.2 per cent of the total, or almost within its probable error.

The changes which may be expected in 1912 may advance the rank of West Virginia by the development of the Blue Creek pool, Kansas may change places with Indiana, and Wyoming may head the third division.

Production by Fields

The addition of new oil regions remoter and geographically quite distinct from the original Appalachian field in New York, Pennsylvania, West Virginia and eastern Ohio, and Kentucky has led to the grouping of several new regions into separate fields defined geographically. These fields are gradually approaching one another and the oils are often sold in the same market, so that the grouping often leads to confusion, which detracts seriously from any real advantage. Nevertheless, the oils are as a rule dissimilar in quality, and hence the division of territory into fields is maintained, and the changes in production are shown below.

Railroads Using Fuel Oil

A full list of the companies using fuel oil on their lines in 1911, is given in Dr. Day's Report, but the list of names is so long that we have not space at this point to publish it, the list including almost two score great systems and showing on what portions of their lines the oil burning locomotives are in use when not used exclusively. It might here be mentioned as of undoubted interest to Californians, that the New York Central & Hudson River Railroad is using oil burners in the Adirondack Mountains, although this information was given to readers of the "Derrick" in a brief dispatch a number of months ago.

Fuel Oils

The most important feature developed by the oil industry of 1911 has been the realization of a supply of fuel oil large enough to be reckoned on as a national asset in power production. During 1910 arguments became convincing that fuel oil was sufficiently plentiful on the Pacific Coast to justify the great trade and manufacturing expansion in California. Oil has been adopted as fuel on the northern transcontinental railroads for significant portions of the lines. The introduction of oil as fuel as far north as Alaska, without bringing the consumption up to the level of present production, has given assurance of permanency of the supply sufficient for the industrial needs of the whole Pacific slope.

The solution of the corresponding problem on the Atlantic coast received much encouragement in 1911 by the great development of oil supplies in Mexico. The quantity of oil which the Mexican fields are now ready to furnish is variously estimated at from 6,000,000 to 12,000,000 barrels a month. The total product was perhaps a tenth as much, the production being limited neither by supply nor demand, but by transportation facilities. The needed tank steamers are being furnished as rapidly as they are built, and meantime the popularity which fuel oil has obtained has already led to a doubling of the market price of fuel oil.

It should be borne in mind, however, that, given a sufficient supply of tank steamers for all the oil that can now be furnished for the eastern coast, the market would probably be temporarily over-supplied. The consumers of fuel require time for the substitution of oil for coal, though the many advantages of the former are obvious.

In view of the inability of the producers to furnish fuel oil in the desired quantity, it is most fortunate that it is no longer necessary to convert oil into power by burning it under boilers. The various engines of the Diesel type, in which a great variety of oils can be injected directly into the cylinders of the internal combustion engine, have greatly raised the efficiency of oil for power; but this same revolution in method of burning involves changes in construction of the engine, which will require time for introduction.

Railroads

The following table of railroad consumption of fuel oil is given because it is practicable to present sufficiently accurate statistics to show the marked gain in each recent year, and because this use is especially popular because of the added comforts from freedom from coal cinders, because of avoiding the danger of forest fires, and particularly because of the saving in labor. In fact, the weight of trains where coal is burned on mountain divisions is limited by the endurance of the fireman, until the coal can be replaced by oil. In recommending the adoption of fuel oil on the mountain divisions of the Canadian Pacific Railway, William White, second vice-president, states that one of the reasons for this change is the removal of danger from conflagrations in the great forests of British Columbia. He also alludes to the failure of the immense locomotives now in use, saying: "It is not the failure of the locomotives; it is the failure of the fire man." A fireman shoveling coal on one of these locomotives for a distance of 130 miles is physically exhausted before getting to the end of the run. The Southern Pacific uses over 1,200 oil-burning locomotives, the Santa Fe over 800, the Northern Pacific 20 and the Great Northern 115.

"STANDARD AFFAIRS"

The following is quoted from our contemporary, the "Oil, Paint and Drug Reporter," and throws a light on the California situation which should be of the utmost interest:

It may be of interest to note the growth of the Standard Oil Company's business as compared with the whole. According to the runs and shipments of the Standard for the past seven months, that concern is handling 30 per cent of the State's entire output. During the period mentioned the runs of the Standard were 14,753,912 barrels and the deliveries were 11,513,484 barrels, showing that 3,240,428 barrels went into the company's tanks. Of the total production for the seven months the Standard secured nearly one-third, and of the total amount stored it placed in its own tanks four-fifths, leaving but one-fifth of the surplus to its competitors.

"The Standard is building iron storage reservoirs and is taking all the oil it can get. The Union-Agency, its principal competitor, is not at present increasing its surplus. The Standard is credited with about 28,000,000 barrels in storage and the Union-Agency with 13,000,000 barrels.

"A prominent Agency member recently declared that they would be drawing on stocks before January 1, 1913. With their stocks depleted and the Standard buying up all the "outside" oil, it is not difficult to see what might happen to the Agency.

"The Standard is buying both light and heavy oil and most of its storage oil is the heavy product. The company has shown no inclination to go into the fuel oil business to date, selling for that purpose only the residuum from its refinery, but it if expects to control the oil business on this coast it must necessarily go into the fuel business, as that is the big end of the industry. With a surplus of 28,000,000 barrels of fuel oil on hand it is at least in a fair position to "start something."

"The Standard's runs and shipments for the period named are as follows:—

	Runs	Shipments
January	2,177,190	1,687,491
February	1,911,947	1,484,920
March	2,095,631	1,625,639
April	2,137,089	1,510,192
May	2,043,826	1,566,935
June	2,125,781	1,742,346
July	2,262,448	1,895,961
Totals	14,753,912	11,513,484
Placed in storage.....		3,240,428

"The Standard has entered on a campaign of increased activity since the recent decision to increase its capital to \$50,000,000. The Point Richmond refinery is being enlarged and a big asphalt plant is being erected. For the manufacture of asphalt the heavy oil is used and this many explain the action of the company in buying all the heavy oil it can secure. The for 24-gravity oil and 2½ cents increase for every degree in excess of that. The company has just closed contracts with a number of producing companies outside the Agency at the prevailing price. Aside from its efforts to buy oil it must be remembered the company is running fifty strings of tools and increasing its own production more rapidly probably than any other concern in the State.

"There are no indications now that the company has anywhere near enough oil. When it does get enough it is believed some interesting oil history will be made in California." recent contract made by the company with the Belridge Oil Company for its production was made on a basis of 50 cents

PRODUCTION OF PETROLEUM IN 1911
Continued From Page 8

Thus far in locomotive use oil has simply replaced coal under boilers, but within the last year a locomotive has been constructed in Switzerland on the Diesel principle and is being subjected to thorough practical tests.

Consumption of Fuel Oil by the Railroads of the United States, 1906-11

	Length of line operated by the use of fuel oil.*	Quantity of fuel oil consumed by railroads	Total mileage made by oil-burning engines	Average number of miles per bbl. of oil consumed
1906	15,577	15,577,677	74,079,726	3.93
1907	13,573	18,849,803	64,279,509	3.81
1908	15,474	16,870,882	72,918,118	3.66
1909	17,676	19,905,335	89,107,883	3.74
1910	22,709	23,817,346	104,270,964	3.75
1911	27,368	27,774,821		

*Some of these lines also used coal.

Manufactures

The quantity of oil used as fuel in manufacturing and other industries cannot be computed with satisfactory accuracy, but it is estimated that including railroad use, nearly 50,000,000 barrels of the California oil went for fuel. In Texas and Louisiana the fuel oil used is estimated at 9,000,000 barrels, much of which was in the form of residues after light distillates were taken off. In the Mid-Continent field, also, crude oil as fuel is fast giving place to these "topped" oils. Of this material about 2,000,000 barrels was consumed. Little oil from the Eastern fields finds use as the heavy residuum is valuable for manufacture into lubricants, paraffin wax, etc. In all nearly 62,000,000 barrels were probably consumed as fuel oil in 1911 in the United States; a fair estimate of the consumption for the preceding year is 61,000,000 barrels, the increase showing a growing appreciation of oil as fuel.

The chief use of gasoline is as internal combustion fuel, and the quantity of this material used will be referred to elsewhere.

Smelters

California oil has been used for some time in reverberatory furnaces at McGill, Nev., and Cananea, Mexico. Early in 1911 arrangements were made for the use of oil in the smelter of the Ray Consolidated Co., at Ray, Arizona, and in the copper smelter at Steptoe, Nevada, of the Nevada Consolidated Mining Company. At the Van Anda smelter, on Vancouver Island, satisfactory experiments have been carried out with California fuel oil.

United States Navy and Merchant Marine

The third interesting use of fuel oil is for water navigation. In this the advance in 1911 was world-wide.

Experience with fuel oil in the United States navy has been so satisfactory that its use will be extended as rapidly as is permitted by considerations of supply and cost. Already the navy has 19 oil-burning torpedo-boat destroyers, and eight battleships which burn oil as auxiliary to coal. The battleships Nevada and Oklahoma, now under construction, will burn oil exclusively.

During the year 1911 the Navy used 15,000,000 gallons of fuel oil, and it is estimated that the consumption for the present year will be 21,000,000 gallons. Oiling stations of 700,000 gallons capacity have been established at Bradford, R. I., Norfolk, Va., Charleston, S. C., and Key West, Fla., A station of this size is being constructed at Guantanamo, Cuba. At each of these stations provision has been made for a considerable increase in tankage.

The only naval oil tanker at present in service is the Arethusa, with a capacity of 1,400,000 gallons. Each of the Navy's five most recent colliers, however, has provision for carrying 375,000 gallons of oil, and future fuel vessels built for the navy will probably be oil tankers rather than colliers.

In the merchant marine the event of interest was the voyage of the Honolulu from Baltimore, Maryland, to Seattle, Washington, carrying a cargo of 7,000 tons of coal, but propelled by oil. The journey covered 14,000 miles and required a barrel of oil per mile. That is, 7,000 tons of coal were moved one mile by one barrel of oil. The oil weighed 1,866 short tons, and to serve the same purpose it is estimated that 5,600 tons of coal would have been needed.

Heavy Oil Engines—The heavy oil engine of the Diesel type continues to develop and its extensive adoption for marine service within comparatively few years seems probable. The 12 most recent submarines will have Diesel engines of from 300 to 450 horse-power; the submarine tender Niagara will have an engine of 900 horse-power; and a 150 horse-power engines of this type is being installed in a 50 foot cutter for experimental purposes.

The application of Diesel engines to tank and other freight vessels and even to passenger craft was extended to a point where the expression "steamer" is no longer strictly correct, and a new term will be required for distinction between sailing vessels and those propelled by engines.

The most significant achievement of fuel oil in engine ships was the voyage of the Danish East Asiatic Company's Diesel ship Selandia, which crossed from Copenhagen to London in March, 1912, on her maiden voyage to Bangkok, Siam. The Selandia is of 7,000 tons and is propelled by two Diesel engines of 1,200 horse-power each. All auxiliary machinery such as cargo winches, and electric light plant are driven by additional Diesel engines. There are, of course, no smoke funnels. The coal bunker room is saved, and most of the boiler space, though the space occupied by the engine is slightly greater than when steam engines are used. The oil carried is 1,000 tons, of which a ton is burned in two hours under full speed. Two larger Diesel ships have been ordered by the same line.

World's Production

The world's production of petroleum has increased each year since 1906, when the total was 212,912,860 barrels, to 345,512,185 barrels in 1911. Of this the United States contributes 63.80 per cent, or nearly two-thirds. Russia's percentage has fallen to 19.16, and Mexico now appears as third in rank, taking the place of Galicia, which now drops to sixth, and this order is likely to be maintained in 1912, with an additional gain from Mexico. No other country is likely to produce more than 4 per cent of the total supply, which probably will not increase beyond the present total.

Stocks

Total stocks in the United States increased from 131,030,158 barrels at the beginning of the year 1911 to 138,239,572 barrels at the end. This stock or supply of crude above ground amounts to little more than half a year's supply. The gain in California was over 11,000,000 barrels, or 4,000,000 more than the net gain for the country. The decline was greatest, nearly 7,000,000 barrels in Illinois. A drain on stocks began late in the year in the Mid-Continent field. The stocks held by the Eastern pipe lines at the end of 1911 showed a notable decline.

(Editor's Note: The remaining important points in Dr. Day's Report will be discussed in the next issue of this magazine.)

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The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry, to which it is dedicated, for the promotion of truth and in the aid of progress.

"ACKNOWLEDGEMENTS" Elsewhere in this issue will be found the important features of Dr. David T. Day's report on the Petroleum Industry in 1911.

It needs little comment at this point: As far as California was concerned we believe a look at the January, 1912 issue of the "Derrick" will give in the main all the big features mentioned by Dr. Day and some points not mentioned.

Dr. Day's excellent report, which is, of course, the last word on the subject of world production in 1911, coming as it does from the highest authority, is not the less kindly received because of the "Acknowledgements" embodied therein. And the "California Derrick," as one of those journals to which the acknowledgements were made, begs to thank the head of the Petroleum Department of the United States Geological Survey: Such being the least courtesy we can do in return. It might be mentioned that but two other California publications are mentioned by the Geological Survey as having been of aid in compiling the report: Of these the "Derrick" has been oftenest thanked by the Survey, the "Oil World" coming next and a Los Angeles publication being mentioned this year for the first time.

* * * * *

WILD

RUMOR

There is a wild rumor amuck to the effect that the Southern Pacific, owner of the control of the Associated Oil Company, (to be exact, \$20,069,000 shares out of \$40,000,000) is about to relinquish said control, under terms not yet set forth, to the Union Oil Company of California. So many rumors have been spread concerning Associated that we fear to believe anything that may happen: It is time enough to believe **AFTER** the merger has taken place.

Should such a merger take place the Union Oil Company would be one of the greatest and most powerful oil companies in the world.

So far as we know the merger is still newspaper talk but the many recent changes in the management of the Associated may possibly forecast some such action as rumor says has already occurred. The only reason conceivable that would cause the Southern Pacific to separate itself from the Associated control is the attitude of the government regarding railroad companies holding interests other than those doing a transportation business.

We presume Associated shares will spurt now; that outsiders will buy, and later the stock will drop—that is, **unless** the rumor is founded in fact.

* * * * *

WASTE

Dr. Jos. A. Holmes, Director of the Bureau of Mines, in the preface to "Bulletin 47," (Notes On Mineral Waste), states: "During the past year, in producing 500,000,000 tons of coal we wasted or left underground, in such condition that it probably will not be recovered in the future, 250,000,000 tons of coal. * * *". In other words one ton of coal was wasted to every two tons produced; how long, we ask, would an oil operator who allowed a waste of this nature in his production, be able to keep his head above the waters of financial disaster?

* * * * *

**USE OF
FUEL OIL**

We would like to have all our readers turn over the pages of this magazine to the review of the United States Geological Survey and see there what Dr. David T. Day says about the growth

of the use of fuel oil. Today the Southern Pacific uses over 1,200 oil burning engines and consumes more than 27,000 barrels of oil daily; the Santa Fe railroad uses more than 800 oil burning locomotives and we presume the daily consumption is in proportion. The great Northern Railroad uses so far but 115 oil-burners, while the Northern Pacific uses about 20. In 1911 the railroads of the United States burned 27,774,821 barrels of oil in engines, covering 104,270,964 miles, as against only 15,577,678 barrels in 1906.

Last year approximately 50,000,000 barrels of California Oil was used as fuel. It is almost superfluous to say that the use of fuel oil would not have shown such a wonderful growth in the last few years were it not the most excellent, economical, efficient and in all ways desirable steam raiser. The extending use the navy department is finding for oil should be given earnest attention. It is merely an indication of the trend of the times. It will be but a few years before coal will be completely displaced by oil in the navy.

* * * * *

**ARGENTINE'S
INTEREST
IN OIL**

The interest of the Argentine Republic in the oil business of California is well shown by the fact that the great South American Republic has recently had a representative in the oil field of Coalinga, studying conditions from every viewpoint to make a report later to his government.

Mr. Guillermo Heilman, the young gentleman sent upon this mission by Argentine, proves himself a very able investigator. He got his experience "first hand" by going right into the derricks and doing the practical work of the driller. The chemistry of California petroleum was fairly well understood by Mr. Heilman as 'The Gift of the Gods.' The navy, the California. Thus, after studying both in the field and in the laboratory he carries back to Argentine, upon his return, a well founded idea of the oil business at it is: incidentally he spreads knowledge of the use of California methods, California tools and appliances and the greatness of the California oil business, to distant and almost untouched fields. As Mr. Heilman received a letter while in Coalinga, from the Director of the Department of Mines of the Argentine Republic, offering him the position of General Manager of the oil fields of his government, it will be seen to what an extent the California influence may possibly go. The offer of this position was accompanied by the request that thorough investigation be made of American oil well tools and machinery, and especially the California Rotary well drilling system.

In a recent communication from Mr. Guy H. Salisbury, Coalinga oil operator, Mr. Salisbury said:

"The oil indications in the Argentine Republic are viewed by Mr. Heilman as the 'Gift of the Gods.' The navy, the 27,000 miles of railroads, and the many manufacturing interests of the Republic are annually importing fuel oil and oils for other purposes into their country valued at many millions of dollars. The government is very anxious to develop its oil resources and has set aside \$3,000,000 for the purpose of pioneering the oil fields of the Republic. The field in the Southeastern part of the Republic, lying along the Gulf of St. George, has a very good production today; the oil is of asphalt base, 15 degrees Beaume, mostly valuable for fuel, as it is not a refining oil. The geological conditions are very similar to those about Coalinga, Mr. Heilman states; the depths of the wells vary from 1,200 to 1,500 feet. This field is located practically at tide-water, being but 3000 ft. from the sea coast. Another oil field exists in the northwest part of the Republic; the sands traverse along some six states, paralleling the Andes. Several prospect wells have been drilled showing that the territory is shallow and the oil quite light, varying from 20 degrees to 48 degrees Beaume."

In sending Mr. Heilman to California the Argentine Republic displays excellent judgment; Not only does it send its envoy to the mother country of the Petroleum Industry—America—it sends to the most enterprising oil region in America, thus "killing two birds with one stone"

* * * * *

**VALUES
CONTRASTED**

The combined gold, silver, lead, copper and zinc mines in California produced \$25,000,000 worth of metal in 1911. About half the value of the oil production last year. In not one of the following states—Arizona, Utah, Nevada, Montana, Idaho and Washington was the combined metal output value as great as the petroleum output of California in 1911.

State Mining Bureau Soon to Issue Petroleum Bulletin Covering Southern Oil Fields

Bulletin 63 of the California State Mining Bureau will in all probability be issued inside of sixty days. We believe we are conservative when we state that this bulletin will be of unusual interest and value to California Oildom in particular and in general to outsiders who are interested in the oil fields and business of the greatest oil producing country in the world.

Scope of the Bulletin

Bulletin 63 will not, however, cover all the fields of the State. While it was originally designed so to do, and while considerable work was done in Coalinga and Kern River, the San Joaquin Valley work was left in an unfinished condition because of a shortage of funds on the part of the Mining Bureau, which was not entirely provided for by the last legislature because the ins and outs of the new tax system were not fully understood at the time the appropriations were being considered. For this reason it was decided to concentrate on the fields south of the Tehachapi, including, of course, Santa Maria and the other Coast districts.

The Bulletin, therefore, takes within its scope the Ventura County districts, Newhall, Los Angeles City, Salt Lake and Sherman, Whittier and Fullerton, Puente, Santa Maria and Lompoe, Cat Canyon, Summerland and Santa Barbara Coast, and a final chapter is devoted to summing up and comparing the qualities of oils from the different fields.

The Bulletin is undoubtedly the most thorough ever issued, covering the districts named. It will in all probability be in the neighborhood of 365 pages in length. Of these, some 270 pages will be descriptions and notes, and 95 pages will be devoted to oil analyses. Photographs and maps will swell the size of the volume. The Bulletin has been brought down practically to date, although field work ceased a number of months back.

The tremendous labor of getting together the immense amount of data in Bulletin 63 fell almost entirely upon the shoulders of the well known petroleum chemist and engineer,



PAUL W. PRUTZMAN,
Author of State Mining Bureau Bulletin No. 65

Mr. Paul W. Prutzman, State Petroleum Expert, whose unusual abilities, combined with his many years of experience in every branch of the oil business, practical and technical alike, have peculiarly well suited him for the undertaking of such a responsible work. The treatment given the various subjects discussed in the book is unique for its straight-forwardness and practical application. The discussions of the various districts are always so plainly worded that seemingly anyone at all acquainted with the oil business can understand them. This will undoubtedly cause the Bulletin to be greatly in demand by capital desiring to be reliably and impartially informed on the districts under discussion, and also by business men who are already interested. The fact that practically every good well, as well as those drilled without success, is chronicled as each district is discussed, thus showing

apparent limitations, will be of distinct interest and value.

State Mineralogist Wm. H. Storms, who is a great man for action, is hurrying the business of publishing Bulletin 63 to as early a completion as possible. At the same time he is rushing Bulletin 64 along also, this latter bulletin being given over to statistics of the Mineral Industries of California during 1911.

Because Mr. Prutzman is now taking his first vacation in a good many years, during which time he has been actively engaged in the oil business, either as proprietor of his own refinery, field superintendent for oil companies, refinery designer and builder, State petroleum expert, and especially in the chemistry of petroleum—for the reason, we say, that Mr. Prutzman is now taking his vacation, we are unable to run the continuation of his article in this issue of the "Derrick", although we hope to give the matter to readers in the next month's journal. Also, we fully expect to give a large portion of the new bulletin prepared by Mr. Prutzman, in these pages as soon as the State will permit.

It is superfluous to say that the "Derrick" regards the coming bulletin very highly.

BIG CONSUMPTION GAIN IN AUGUST

The consumption figures for August show a big gain over those of July. Consumption jumped more than 10,000 barrels per day; to be exact 10,686 barrels. The aggregate gain totalled close to a third of a million barrels—331,267 barrels gain in consumption for the month. The total production for the month was 7,694,442 barrels; total consumption 7,314,213 barrels. Gain in storage 380,229 barrels; scarcely more than one day's consumption. The total storage in California at the end of August was 45,402,689 barrels, while the average daily surplus was only 12,266 barrels, indicating a very healthy condition.

These figures will be the cause of undoubted rejoicing to the Independents, or for that matter to producers generally, as if the increase in consumption is maintained, higher prices will prevail.

The number of rigs completed in August was 70; wells drilling numbered 412; producing, 5,556; completed during month 82; abandoned, 8.

A full analysis of the figures will be given in the September Review, to be published October 5-10.

Chemists to Visit Oil Fields

About the first of October an excursion of members of the International Congress of Applied Chemistry will spend a day in Kern County in an examination of oil field work. Their time permits but one day's visit to the fields, and the Kern County Board of Trade, which has their reception in hand, suggests a special train to the West Side fields. Different oil companies have donated the use of automobiles, but it is probable that the machines will only be used in the fields and not from Bakersfield to Taft.

It is thought possible that a number of the chemists who have large manufacturing interests, may locate their business on the Pacific Coast when they have demonstrated to them the permanency of the fuel oil supply.

Resumption of Suit for Federal Lands

The hearing in the government's suit against the Southern Pacific to recover 6000 acres of oil land in Kern County, alleged to have been fraudulently obtained by the company, has been transferred from San Francisco to Los Angeles, where it will be resumed in September. Since the hearing in San Francisco, several months ago, another hearing in the same suit was held in Washington, D. C.

SUNSET-MIDWAY-McKITTRICK



The Santa Fe Company has a fine flowing well in its No. 17, on section 6-32-23, at the edge of the town of Fellows. The well has spouted at times during the past few weeks. This week it began a steady flow and is now doing 2500 barrels a day. A hood was built in the derrick, which was partly blown away a few days ago. It has since been repaired and very little of the oil is now being lost. The gravity is 19 degrees.

The Boston Pacific's No. 1 well on section 32-31-23 is now flowing steadily, making 2500 barrels daily. The gravity is 26.5. The well is under complete control and the production is being run by the Standard Oil Company. The oil is 26.5 degrees, Beaume.

The Oakland Midway has brought in its No. 2 well on section 13-31-22. It was finished at 1950 feet, and is making 500 barrels daily.

The South Midway, on section 34-32-24, has a splendid well in its No. 4. It came in on August 30th, and is now doing 1500 barrels daily of 26.2 gravity oil.

The Combined Oil Company has leased forty acres from the Alberta Midway on section 14-31-22. A new rig has been put up and drilling will begin immediately. Material for a second rig is being hauled. H. W. Thomas will have charge of the operations.

The McKittrick Western Oil and Land Company, which took over the former Starlight holdings, is drilling No. 2 well on section 21-31-22. No. 1 well is a small producer.

The Fairfield Oil Company has reached a depth of 1500 feet in its No. 3 well on section 13-31-22.

The St. Lawrence Oil Company, section 5-32-23, has material on the ground for its No. 6 rig. Five wells are producing.

The Midway Premier, section 5, 32-23, has five wells on production. The rig for No. 6 is building. A dividend of one per cent per share will be paid by this company this month, the same amounting to \$8000.

The M. J. & M. & M. Consolidated is getting a production of 2950 barrels daily from four wells on section 36-12-24. The total production of the lease is 4000 barrels daily. The four referred to are: No. 10, 1500 barrels; No. 9, 300 barrels; No. 8, 900 barrels; No. 7, 250 barrels. Two new rigs will be built about October 1st.

The Midway Five Oil Company, section 5-32-23, perforated its No. 1 well recently at 2160 feet. It is now producing 275 to 300 barrels daily of 21.4 gravity oil.

The Panama Oil Company, on section 30-12-23, has contracted with the American Contracting and Drilling Company to complete No. 2 well and drill No. 3.

The Anaconda Oil Company, section 12-11-24, has reached a depth of 4065 feet in No. 14. Indications promise a flow of light oil.

Well No. 5 of the Midway Peerless Company, section 15-31-22, has been spudded in.

The Carbo Petroleum Company has spudded in its No. 11 well on section 26-32-23.

The California Counties Oil Company, (formerly LaBelle), on section 4-32-23, is preparing for a large amount of work. A contract has just been made with the California Well Drilling Company to drill ten wells. Two strings of tools will be kept running until the contract is completed. Boilers are now being moved on the property and rig building will commence at once. The LaBelle holds the record for the lightest gravity oil in the Midway-Sunset field, 27.8 degrees.

The Midway Fields Oil Company's big well on section 4-11-23, broke loose unexpectedly the latter part of August. After spouting for ten hours it sanded up. In that time it produced 4000 barrels of oil, the gravity being 27 degrees. A Mortenson capper is now being put on. When it is in place the well will be reopened. The company's rig for well No. 2 is being built.

The General Petroleum Company, on section 14-31-22, Shale division, has six new rigs up and will keep three strings of tools running. On the Nevada Midway division, on section 26-32-23, the General has three new rigs and two strings running. The company's No. 1 well on section 22-32-24 is down 3060 feet.

The Alaska Pioneer, on section 32-31-23, has reached a depth of 800 feet in No. 5 well, and 1255 feet in No. 6. J. F. Ross is doing the drilling under contract.

The Hale-McLeod Company has completed the rig for No. 10 well and will begin rigging right away. Electricity is being installed for pumping. The gravity of the company's production is over 22 degrees.

The Buick's No. 5 well on section 32-31-23 is drilling at 1310 feet.

The Rock Oil Company, section 23-31-22, has landed the 10-inch in its No. 12 well at 1650 feet and is going down with the 8-inch. The company has five active producers and one idle.

The North American Consolidated, on sections 16 and 22, has the record number of producing wells. There are 106 of these. Two are being drilled.

Material has been ordered by the Dunlop Company for their sixth well on section 26-32-23. Rig building will begin on arrival of the material.

The South Midway Oil Company, on section 34-32-24 has brought in its No. 4 well. It flowed for several hours at a rate of 5000 barrels per day before "sanding". The oil is of high gravity, about 26 degrees.

The Pacific Crude's big well on section 32-31-23 is holding up its record as a producer. It is doing a full 7000 barrels daily. For nearly three months this well has been a consistent producer. The returns from it have enabled a dividend being declared of 10 cents per share on the 700,000 shares of stock issued. The well came in on May 30th. On June 3rd, before being controlled, it caught fire and burned for four days. After hard work the fire was put out and the flow controlled. Since then it has been producing upward of 7000 barrels. Rig for No. 2 well is now being built.

Whether or not the old Lakeview well will again add to the Midway field's production will soon be known. The hole has cleaned out to a depth of 2200 feet. The six-inch casing is being taken out in pieces. It was worn to the thinness of a knife-blade by the former output of the well. The work is being done by the Lakeview Oil Company, the Union having given over possession. The Lakeview Oil Company, on section 25-12-24, has its No. 9 well down 1400 feet. No. 8 is doing 500 barrels a day.

Section Two Syndicate brought in its No. 5 well on section 2-32-23, as a gusher. It spouted over the derrick for half an hour and then sanded up. The work of cleaning it out is now under way. The depth is 2656 feet, and there is every indication of its being a big producer.

The Northern Exploration Company has brought in its No. 1 well, section 26-31-23, at 2107 feet. The well has not yet been tested, but all indications point to its being a big gasser. On section 22-31-23, the company will set the casing at 1953 feet.

On section 20-31-23 the United No. 21 well reached the oil sand at 2710 feet. The 6 1/4-inch casing is now being put in. In well No. 25 the American Contracting & Drilling Company is making excellent headway. The hole was down 2325 feet at last reports. The 10-inch will be landed at 2350 feet.

The Standard got another gusher on section 36-31-23 recently in its No. 5 well. It broke loose at 2400 and for a few hours spouted a large amount of gas, which was followed by a stream of oil that has since been going over the derrick. For a short time the flow was estimated at about a 5000-barrel rate, but it is now estimated to be about 1000 barrels daily.

On section 6-11-23, the Maricopa National Petroleum Company is cleaning out well No. 2. No. 1 is making 300 barrels daily. No. 8 is drilling at 1185 feet.

On section 32-31-23, the Alaska Pioneer has spudded in well No. 6. The hole is now down 640 feet. J. F. Ross has the drilling contract. No. 5 is being rigged up.

The Standard is laying a six-inch line from section 16-32-24, to pumping station on 1-32-23.

The Calidon Petroleum Syndicate, section 19-31-23, is deepening its No. 1 well to tap a lower sand.

Pluto Oil Company, section 19-25-19, Devil's Den, is drilling in a very hard sandy shale at a depth of 3140 feet. The formation carries much gas. Work was delayed by a bit lost in the hole. The emangement is much encouraged with the present outlook.

Rig for well No. 11 is being fitted up by the Carbo Petroleum Company on section 26-32-23.

Work is now progressing looking towards the construction of the "Westside-Ventura" roadway, "from Midway to the Sea." The first step to be taken other than the arousing of public sentiment in favor of the road, to-wit, surveying the line the road is to follow is now under way. The road in Ventura County will be twenty-five miles in length and will cost \$79,200 in all. The surveyor in charge of the work to be done through San Luis Obispo county has already been appointed. The whole work of surveying this highway is expected to be completed within a few weeks; immediately it is finished bonds will be floated or money taken from the road funds of the different counties to do the actual construction work. The road is well on its way at last.

Interesting Developements of Recent Date in all the Fields

Oil Steamer Burns

The oil steamer Rosecrans, property of the Associated Oil Company, was recently totally destroyed above the water line by fire, while at Alcatraz; loss approximately \$80,000. Fire was due to a boiler-room explosion. The vessel, which was loading at the dock was hastily freed, drifted with the ebb tide to sea and plunged to the bottom about half an hour after being cut from the dock. The capacity of the Rosecrans was 30,000 barrels. The vessel was thirty years old.

Monte Bello's Production

Of the 67,000 barrels monthly output of the Santa Paula field, nearly one-third, or 20,000 barrels, is produced by the Monte Bello Oil Company from its twenty-five shallow wells near Fillmore. Not one of these wells exceeds 800 feet in depth, and the product averages nearly 30 degrees in gravity. The Monte Bello pool is one of the richest small pools ever opened up in the state.

Union Financing Pipe Line

The construction of the duplicate pipe line from Junction to San Luis Obispo, to parallel the Independent Transportation Company's line, is being financed by the Union Oil Company, and for that purpose the company is issuing \$1,000,000 in bonds at 5 per cent. for one year. Work on the line has already been commenced and will be finished within ninety days. The distance between the two points is seventy-five miles. The pump stations at present installed are of sufficient capacity to take care of both lines.

Loses 10,000 Barrels by Fire

The Associated Oil Company lost 10,000 barrels of oil in a fire which threatened to consume 40,000 barrels in a tank at Canares pumping station. Approximately 30,000 barrels was saved by draining it from the bottom of the tank and running it into a hastily constructed sump.

Union's New Plant

The Union Oil Company will shortly have a plant in operation to supply Lodi and the surrounding country with oil. A site has been selected for the plant, which it is understood, will soon be erected.

New Lost Hills Strike

A strike in the Lost Hills field was made very recently by the Evinger Oil Company that may widen the production belt about a mile. The location is in section 28, a mile northeast of the Universal Oil Company's producers, and the hole is 2,218 feet deep. The oil sand was struck unexpectedly, and drilling was at once stopped and the well cemented. Until after the well has been redrilled the extent of the strike will not be known, but the owners believe they have a "real" oil well.

General Petroleum Makes Purchase

The General Petroleum Company has purchased ten acres of land just outside the city limits of Los Angeles, on which in the near future, it is reported, it will build a small refining plant. The oil brought south in the General Pipe Line Company's line will be treated at this plant, which will gradually be enlarged to handle a large amount of oil.

Associated's Lost Hills Producer

The Associated Oil Company, after drilling in the Lost Hills district for more than a year has brought in its first good producer located in section 29-26-21. The hole is 760 feet deep, and the well is reported to be making 200 barrels a day, but the oil is much heavier than the average in this field, running about 20 gravity.

Three Pipe Lines Being Rushed

Three pipe lines are under construction through the Tejon pass, two for gas and one for oil. The lines are going from Midway to Los Angeles and are being built by the Midway Pipe Line Company and the General Petroleum Company. Three camps are now established at the door of the pass and there is much activity in that locality because of the great amount of construction work now under way. Laying pipe through this mountain region is an expensive as well as arduous undertaking. The rock often has to be blasted and trenches have to be sunk to a great depth in order to preserve the grade of the line. In some places the pipe has to be lowered by means of block and tackle.

The Midway Gas Company's line is very rapidly nearing completion; it is expected the 12-inch line will be running gas from the Buena Vista Hills to Los Angeles some time in October. The 16-inch pipe line, also under construction, will likewise be rushed. Los Angeles has gone gas-crazy; it looks as though an industrial boom will result from the city's getting natural gas. The rates for the gas are expected to be very low, possibly 30 cents per thousand feet.

Output Smaller

The Reporter's Los Angeles Correspondent says that the Mannell-Minor Oil Company's well in section 35-27-20, about eight miles north of the Belridge district, and which caused much excitement recently, has dropped off in its output to about ten barrels a day. It was a wildcat, and was supposed to have opened up another rich little pool, but it has turned out to be a disappointment. The Standard bought 640 acres of land in the immediate vicinity soon after the strike was made, and is drilling three wells on the property. It will require a number of wells to thoroughly test the territory. It is rumored that Standard Oil Co. has contracted with the Mannell-Minor Company for its oil at 80 cents a barrel, also that a four-inch line will connect the location with its Belridge line.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

El Cerrito to Dissolve

A special meeting of the stockholders of the El Cerrito Oil Company is called to meet on September 17th at San Mateo for the purpose of voluntarily dissolving the corporation. The company was organized as the Anderson Oil Company in March 1907; later the late J. R. Turner, of the Tavern Oil Company, became interested and organized the El Cerrito Oil Company on July 29, 1907. A 4,000 foot hole was drilled on section 14, 21-17, without favorable results, and then the company moved the greater portion of its movable property to the Sunset District, where a hole was drilled but failed to secure oil in paying quantities. Thus another pioneer is laid to rest.

File On Southern Pacific Lands

The following mineral locations were recently filed, to-wit: The S. E. of the N. W. and the S. W. of the N. E. quarter, the S. $\frac{1}{2}$ of the S. W. and the W. $\frac{1}{2}$ of the S. E. quarter of section 25, 20-14. The names used are, W. Rowe, H. W. Jackson, W. R. Myers, W. F. Dixy, T. S. Minot, Z. A. Holland, T. W. Pack, S. Schuler, S. T. Grissim, J. C. Clark, R. V. Hall and B. C. Brown. These appear to be the same parties that made similar locations last month on lands claimed by the Southern Pacific. The section effected, 240 acres located, is being fully developed by the Kern Trading and Oil Company, their main camp of the west side field being on this section. T. S. Minot is no doubt the attorney for the locators.

Other mineral locations than the above were also filed on lands claimed by the Southern Pacific Company, under a patent on the 19th day of August; the lands along the west side and located as follows: In township 19 south, range 15 east, all of section 35. In township 20 south, range 15 east, all of sections 1, 9, 13, 23 and 27, and the west half of section 21. In township 20 south, range 14 east, the west 120 acres of the N. $\frac{1}{2}$ of the N. $\frac{1}{2}$ and west 120 acres of the N. $\frac{1}{2}$ of the S. $\frac{1}{2}$ of section 13; the N. $\frac{1}{2}$ of the N. $\frac{1}{2}$ of section 23, and all of section 35. In township 21 south, range 14 east, all of section 1, the E. $\frac{1}{2}$ of section 11 and the N. $\frac{1}{2}$ of section 13. In township 21 south, range 15 east, the W. $\frac{1}{2}$ of section 3, the E. $\frac{1}{2}$ of section 5, the N. $\frac{1}{2}$ and S. W. $\frac{1}{4}$ of section 7, the S. $\frac{1}{2}$ of section 11 and N. $\frac{1}{2}$ of section 17. The individual names used on these mineral filings are as follows: W. J. Flinn, F. Richardson, G. W. Kelley, R. W. Rowe, D. L. Wiley, J. E. Burnett, W. A. Higgins, C. T. Lehmann, T. E. Hooper, C. H. Teaff, D. Smith, C. E. Carlson, J. R. Wilcox, H. Sliffer, W. T. Dixey, H. W. Jackson, J. D. Pertridge, H. T. Hendricks, J. P. Kerlin, F. G. Kerlin, J. C. Clark, T. S. Minot, T. W. Pack, S. P. Grissim, W. R. Myers, B. C. Brown, Z. A. Holland and S. Schuler. T. S. Minot, attorney for the locators, says the above named are citizens of California, business men, professional men and bankers. Mr. Minot states that he will file a bill to enforce the exclusion and exception in the patent, and to also test the withdrawal order on the Southern Pacific lands made and ordered by President Taft, and the Ballinger Order of September 27th, 1909; he will seek to have the interpretation of the "reservation and exception" in the enabling act, the bill and the patent fully set forth, by the courts.

California Oilfields, Ltd.

The California Oilfields, Limited, has re-drilled well No. 5, located on the east line of the west half of section 26, 19-15, and a lower oil sand was entered at 2,902 feet; the bit was carried over 20 feet into the new pay sand, which proves to be a very

good producing sand. The well is a little over 3,100 feet deep. When the well was originally brought in it made about 500 barrels per day. In re-drilling the well the production has advanced to 850 barrels per day, and the product is a light gravity oil, 21.5 Beaume. The British Consolidated drilled in well No. 2, directly west of the Limited well, to about 2,890 feet, but the well did not prove a producer. This well of the Limited is the "Irony of Fate," as far as the British Consolidated is concerned; had the British drilled only 200 feet deeper they would have entered the pay sand and secured a producer instead of a failure.

British California Oil Co.

The British California Oil Company, Limited, section 16, 20-15, are at work pulling the 4 $\frac{1}{2}$ inch casing, over 4,175 feet of which is now out, while the whole string is coming out in good shape. There is about 160 feet of perforated pipe on the bottom of the hole that will be removed before the string is replaced in order that a better understanding can be had of the conditions there. The manager, John Thompson, desires to do a little prospecting ahead before shutting off this last water, which will be done with the 4 $\frac{1}{2}$; the upper water is shut off at 4,206 feet with 6 $\frac{1}{4}$ -inch casing. The well will be drilled deeper. At present the formation has changed to a very encouraging appearing sand, showing a little oil through a pipe full of water, and considerable gas is coming up. The well is 4,377 feet deep; hole in good condition to go ahead.

Coalinga Crown

Manager Pottle of this company paid a visit to the property located on section 30, 19-15 recently and stated that the company would soon build a rig on the south line of the property and drill to the first pay sand, about 900 feet, to secure a production that would furnish the property with fuel, as the company intends to develop the property for production. Well No. 1 will be carried to the Standard sand as soon as one or two shallow wells have been completed.

Canadian Coalinga Oil Co.

The Canadian Coalinga Oil Company, section 8, 21-15; Well No. 1 is producing a little over 3,000 barrels per month. The oil is sold to the Union Oil Company under a contract; delivery is made to the Union tank on section 5, 21-15.

Universal Oil Co.

The Universal Oil Company, section 5, 27-21, Lost Hills, are drilling a well 500 feet south of well No. 1. At present the well is a little over 500 feet deep. The Dudley wells on section 5 are reported good wells.

S. W. & B. Oil Co.

The S. W. & B. Oil Company, section 6, 20-15, are building a rig on a new location on the east line of the property, opposing the American Petroleum who are drilling their west line.

W. K. Oil Co.

The W. K. Oil Company, section 2, 20-15, lost the rig over well No. 5 by fire Thursday morning. This well was drilled in near the apex of the anticline the latter part of March, 1910, the initial flow being estimated at about 4,000 barrels per day of 22 gravity oil, and has been a fine producer, one of the best wells on the property. The rig will be rebuilt at once, loss of rig and pipe and tools estimated at \$3,000. The origin of the fire is not known. There are 13 completed wells on this property, 8 wells producing, 3 wells drilling and 2 wells temporarily suspended.

Conclusion of the Report on the Newly Developed Territory of the Coalinga Field

Written Especially for the California Derrick by
Guy H. Salisbury

The proven territory of the Coalinga field is now estimated at over 21,000 acres, capable of sustaining 125,000 wells. At the present rate of drilling it will require 15 years, or more, to drill up this territory, and each year the field is extended. The thousands of acres of possible oil bearing lands immediately adjacent to and in front of the present proven field, as well as the great possible field south of Coalinga, has not been included in the above figures. The life of an oil well in this field is not yet known; wells that were drilled in 1897 are still producing. There are from two to five oil sands in some parts of this field, and it has been stated by competent Government experts that this field will be producing oil for the next fifty years.

The number of completed wells in the field, based upon complete reports for the month of July, 1912, showed 1078, of this number 855 were producing and 223 were idle, the idle wells were being cleaned out or being redrilled. The producing of the field for 1911 was, gross, 18,580,333 barrels; out of this amount deduct 831,455 barrels for fuel used under the boilers upon the various properties in the field. This vast amount of oil will soon be in a large measure saved; as soon as the gas that is now going to waste in the field is properly utilized under the boilers. There was shipped out of this field, during 1911, 17,924,843 barrels by pipe line and rail. The average monthly production so far for 1912, (estimated average based on reports from January 1st to June 1st) amounts to 1,652,400 barrels, making a good average per well.

The transportation facilities for handling the production of the field include five pipe lines to tide water and the Southern Pacific Railroad.

The Standard Oil Company has two pipe lines; one six-inch line with a capacity of 13,000 barrels per day, (a day of 24 hours) 31 miles in length, connects at Mendota with the company's main line from Bakersfield to Point Richmond on San Francisco Bay. The second line is an 8-inch, capacity 24,000 barrels per day, 200 miles long and carries the oil direct to

the company's large refinery at Point Richmond on the Bay of San Francisco. The first line was built at a cost of \$217,000; the total weight of pipe used in building this branch line was 1,637 tons; the line direct to Point Richmond was built at a cost of \$1,800,000; the total weight of pipe used in this line was 15,526 tons.

The Associated Transportation Company has a six-inch line to Monterey bay, on the Pacific Ocean, with a capacity of 13,000 barrels per day, 108 miles in length; cost of line \$800,000; weight of pipe used in construction, 5,702 tons.

The Associated Pipe Line Company, (now included in the Associated Oil Company) has an 8-inch line to Port Costa, at the junction of the Sacramento River with the San Joaquin River, just before they empty into San Francisco Bay, 198 miles in length; this line was built at a cost of \$1,872,000; weight of pipe used in construction was 15,370 tons.

The Producers Transportation Company, affiliated with the Independent Oil Producers Agency, has an 8-inch line from this field to Port Harford, on the Pacific Ocean, 100 miles long; cost of construction, \$700,000; total weight of pipe used in construction 7,763 tons.

These lines give this field transportation facilities to move each day 98,000 barrels to tide water, with a total mileage of 637, built at a cost of \$5,389,000, with 45,998 tons of pipe used in construction; this great work gives us a faint idea of what "capital" thinks of the oil industry of this field. There is also quite a large amount of oil moved out of the field by the railroad, that goes into the interior of the state.

All of these pipe lines have lateral lines all over the field (called by the oil men, "gathering lines") as the big marketing concerns buy the oil at the tanks upon the property of each company. The Standard Oil Company will soon build a lateral line into the new shallow territory on section 2, 21-14, to secure this oil on account of its refining quality. The oil "breaks" easily in refining and is rich in by-products, making it unusually valuable.

Coalinga Mohawk Oil Co.

The Coalinga Mohawk Oil Company, section 12, 20-15: Well No. 2 is being re-drilled, is now 4,240 feet deep. Well No. 5 is drilling. Wells No. 1 and No. 4 are producing 800 barrels each per day of 31 gravity oil, sold under contract to the Standard Oil Company.

CHANGES IN LUCEY COMPANY

The great supply houses are to the oil business what the electric spark is to the telegraph system; the energy that secures results. We note the following changes that have recently taken place in the organization of the J. F. Lucey Company. Paul N. Boggs has been appointed Vice-president and general manager of the California business. L. R. (Roy) McCollum, who was formerly manager of the Coalinga branch,

has been elected a director and appointed Secretary of the Lucey-Gillespie Company, of London, England. The Lucey-Gillespie Company, doing business throughout the continent, is affiliated with the J. F. Lucey Company (as announced in the last issue of the "Derrick"). W. S. Evens is taken from the Los Angeles staff and made general manager of the West Side fields with headquarters at Taft. F. B. Clark, Jr., formerly Vice-president, has just completed a business tour of the world in the interests of the company and is now permanently located at New York City in charge of the growing export trade of the company. Mr. Clark predicts very great activity throughout the world in the oil business within the next few years, especially in development work and in the refining of the higher grade oils to meet the increasing demand of the consumers in all parts of the world.

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MARICOPA
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OFFICES

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Miscellaneous Notes of General Interest

Electricity In the Oil Fields

Just to show to what extent motors are being used to drill, pump and run wells with generally, we are glad to make known the fact that the Westinghouse Electric & Mfg. Co., last year, sold 110 motors to the Chanslor-Canfield Midway Oil Co. (Santa Fe) alone; 60 motors to the General Petroleum Company, and smaller quantities to a great many other "going concerns." The Kern River Oilfields of Cal. have 50 motors; also motors are going into Coalinga and the West Side fields constantly.

K. T. & O. Co. to Increase Capital

At San Francisco a special meeting of the stockholders of the Kern Trading and Oil Company has been called for October 10 to vote on increasing the capital from \$1,000,000 to \$10,000,000. The meaning of this is not known to those not "on the inside."

Government Investigating

A New York Grand Jury is declared to be at present investigating the operations of the practically deceased California Consolidated. The high salaries of the officials appears to be one of the main matters for concern. R. P. Boyer, one of those instrumental in placing California Consolidated shares on the market, has been summoned to the court of inquiry to testify to certain transactions.

Standard Will Not Sell All Shares

Directors of the Standard Oil Company of California have decided that it is not necessary at this times to sell in excess of 200,000 shares of the 250,000 shares of new stock which has been added to the company's capitalization. The 200,000 shares, at \$100 per share, the par value, represents \$20,000,000. This will go into the company and to repay a loan of about \$11,000,000 to Standard Oil of New Jersey, according to advices now to hand. Adding the nine millions remaining from the twenty million dollar issue, to the value of the assets the company is already known to possess, makes a total valuation well in excess of sixty millions of dollars at the present time, not taking into account anything but tangible, realizable assets. The brains, the wonderful organization and the business of the company are not here capitalized. The new shares are selling around \$170. The issued capital will be \$45,000,000.

E. F. Burchard of the United States Geological Survey left Seattle about the first of September for Alaska, where he will study the gypsum and marble deposits.

The geological survey estimates that 35,000,000 tons of bituminous coal can be successfully mined in Uinta and Wasatch counties, Utah.

About two-thirds of all oils imported by Switzerland come from the United States.

The Canadian customs department is said to be in favor of admitting fuel oil used in vessels engaged on the high seas free of duty at the port of Vancouver as the result of a tank steamer with a cargo of fuel oil arriving at Vancouver on July 12th from San Francisco, carrying a supply for the coast-wise vessels plying between Vancouver and San Francisco, at which time a duty of 2 1-2 cents a gallon was demanded. A protest was made against the duty by the companies needing the oil. A number of the trans-Pacific steamers of the Canadian Pacific and the Grand Trunk railroads are using fuel oil, and the imposition of such a duty would mean doubling the price of the product to the companies operating oil-burning ships.

Independents to Have Delivery Facilities

Independent oil operators of the Tampico territory are interested in the announcement which has been received here from New York that they are to be given a pipe line outlet by Felix Adler & Co., which obtained a concession from the Mexican government for the construction of a pipe line from the different fields to Tampico. In a telegram to the East Coast Oil Company, Balcolm Anderson, representing Felix Adler & Co., who is now in New York, says:—

"Arrangements have been made with strong banking interests for the construction of a pipe line under the Adler concession. Independent oil producers will shortly be given an opportunity to contract for the transportation of their oil to terminals which the pipe line interests will establish for handling independent oil."

Another important development of the oil situation in this region is the announcement by the Federal Government that it will soon let the contract for deepening the channel of the harbor at Tampico. Besides dredging the bar so as to admit the largest ocean-going vessels, the deep water channel will be extended up the Panuco River to Topila, more than fifty miles above Tampico. Extensive oil development operations are now in progress in the Topila and the Panuco fields which are close together. By extending the deep water channel oil carrying vessels will be enabled to load direct from the wells instead of taking on their oil cargoes at Tampico as at present.

Many Loading Racks For Section Six Companies

The loading tracks along the railroad leading into Wartham Canyon give confidence to those interested in the south side field. The Associated Transportation Company, at Crump station, section 8, 21-15, have a rack where 24 cars can stand and be loaded at once, the rack being situated on the north side of the track. The Lucile Oil Company has a loading rack to the east of the Associated, where two cars can be loaded at once. The Pacific States Oil Company has a loading rack to accommodate one car; the Jefferson Oil Company has a loading rack for one car. The above companies have property on section 6, 21-15; the loading racks are on section 5, 21-15. The Union Oil Company has a small tank and a loading rack on the south side of the main line, with a spur track, to accommodate several cars, where they will soon erect two 5,000 barrel tanks.

Parker Mogul Rotaries

With our BIG 1913 ROTARY we have demonstrated beyond a doubt its SUPERIORITY to any Rotary Drilling Machine on the market. We now have a complete stock of Machines and Repairs at Los Angeles and Taft and have our own representative, Mr. James McDonough, working the fields. Every Machine is GUARANTEED and Defective parts will be cheerfully replaced free of Charge.

Southern Well Works
Chattanooga, Tenn.

SANTA MARIA

Written Especially for the California Derrick by
EDWARD MORRIS

Palmer Union Oil Co.

The Palmer Union Oil Company is getting a production of 1,700 barrels daily from the Blochman property. Four of the former big gushers are now on the producing list and are gradually improving in their output so that the promise of becoming restored to the original volume is good. The sand which clogged all of the wells shut down over a year ago is being pumped out and in the case of No. 4 and No. 2 the air compressor has been used to advantage. Nos. 1, 2, 3 and 4 are the present producers. Frank L. Brown, president of the company, is actively engaged in furthering the campaign for increased production and has secured the services of Roscoe Stevens, formerly superintendent of the Union in this field, as advisor. Mr. Stevens has had a long experience in dealing with the wells on the Union Bell tract just over the line from the Palmer and is familiar with every phase of water and sand difficulty encountered in this part of Cat Canyon. A large portion of the heavy oil in storage on the Blochman tract has been delivered to the California Liquid Asphalt Company via rail shipment from Palmer station, and this concern is in the field for further contracts to fill its orders for refined asphalt. In addition to this disposition of its heavy oil, the Palmer Union is now delivering to the Associated and Union on its regular contracts.

Union Oil Company

The Union Oil Company has again started the air compressor in "Bell 5" trying to open up the clogged, sandy, lower joints of pipe. It is evident that the hole filled rapidly after its first signs of decreased flow of oil and that a large quantity of sand is packed in the casing, owing to the fact that up to date little headway has been made against it. The air line has been run down close to bottom at a late date and some action of the gases resulted sufficiently to start the sand toward the top. Newlove well No. 37 in the main field is staying above the 1,000-barrel mark and is adding a large amount to the monthly output of this property. No. 37's oil is 26 degrees Beaume.

Santa Maria Oilfields, Ltd.

Santa Maria Oilfields, Ltd., adjoining the Palmer on the north, has a remarkable well in its No. 6, which was recently brought in with an initial production of 350 barrels, but has gradually crept up to 600 barrels, the present figure. This well is just north of the Palmer-Dome intersecting line and is evidently out of the range of the water strata which have caused such annoyance, and close to the Rice tract on the east. The oil is comparatively free from heaving sand and tests 15 gravity. No. 2 is being drilled in the oil sand at 2,820 feet and will be ready for the pump within a short time. No. 7 is down 2,450 feet with 8-inch casing and has landed this string to start the 6-inch.

Pinal-Dome Oil Company

Pinal-Dome Oil Company has put its No. 4 Blochman on the pump. This well has been shut down for a long time but the increased demand for good fuel oil from Cat Canyon has encouraged the management to open up some of its producers. Most of the Dome wells in Cat Canyon are in check. The company is now shipping oil via the narrow gauge to Port Harford and has erected several loading racks to facilitate handling the output at the wells. This company is another Cat Canyon producer supplying heavy oil to the California Liquid Asphalt Company at Hadley.

Bradley Canyon Oil Company

Bradley Canyon Oil Company is down over 1200 feet with its first well just west of Fugler's point. Considerable interest is shown by local operators in the outcome of this development work as the well is situated several miles north of any of the Cat Canyon producers and will open up a new section if successful. An early sand at 470 feet indicates that the formation is oil bearing but the lower sands will have to be tapped to prove the volume. The property of the Fugler estate adjoining this tract has recently been taken over by English capital on the strength of the showing of the Bradley Canyon well and two wells will be drilled in to test it at once. This deal was negotiated by A. A. Daugherty of Los Angeles, manager for the S. M. Oilfields, Ltd.

Los Alamos Petroleum Co.

Los Alamos Petroleum Company, under lease to the S. M. Oil Fields, Ltd., is still producing around 1000 barrels of heavy oil daily. This well is wonderfully consistent when it is considered that the oil is 80 per cent asphalt and is practically

devoid of heat units. The production is highly marketable for asphalt refining and contracts have been made with the Edna and Hadley refinery to take the entire output as soon as proper transportation facilities can be arranged.

Purity Gasoline Co.

The Purity Gasoline Company, operated by the Rice Ranch Oil Company to compress gasoline from natural gas taken from the oil wells at the casing head, is now turning out the refined product. The first gasoline from the plant was marketed September 1st and the capacity has been stimulated to 500 gallons daily. The line trappings and toppings from heavy oil are being used in conjunction with the high gravity output of the refinery and a splendid gasoline results.

New Pennsylvania Petroleum Company

New Pennsylvania Petroleum Company is down 2450 feet with No. 7 in the main field. This well shows early signs of being a duplicate of No. 6, which has been the most consistent performer in that district. The formation compares favorably with No. 6 up to this point except that the strata runs shallower and the oil sands will be encountered some distance prior to that of No. 6. It will be ready for a test withing 60 days.

Rice Ranch Oil Company

Rice Ranch Oil Company is down 2900 feet with No. 10 on its old field property and will be ready to complete the well within 30 days. The hole is in perfect shape with 8-inch pipe and from early indications will add materially to the production of the property. No. 11 is also drilling.

Santa Maria Midway

Santa Maria Midway is still working on Well No. 1 in the Tepusquet at a depth of 3600 feet. The company is determined to make a deep hole test of the territory in preference to abandoning the project at a shallow depth.

Princess Oil Company

Princess Oil Company in the Tepusquet is drilling at the depth of 2900 feet and has made but little headway during the past 30 days. Operations on the Muscio well in the Tinequac have been indefinitely discontinued.

Carranza Oil Company

Carranza Oil Company is drilling No. 1 on the Foxen Canyon road near Los Olivos at 1100 feet with 12 1-2-inch casing. The formation has shown no early signs of tar sands but is consistent shale, equally as promising of having the oil sand underlying.

Agency's July Price Higher

Approximately \$67,500 more will be paid the members of the Independent Oil Producers' Agency of California for July deliveries than was paid for June deliveries of petroleum. This fact became known when the auditor's department of the Agency reported that the price for July oil is 3 1-2 cents higher than the June price, and the deliveries showed an increase of 100,000 barrels.

The statements showing the amount of oil delivered to the Agency during July and the price received for the product have been mailed to the producers. It was stated that 1,200,000 barrels had been sold during July and that the price paid to the members was 33 1-8 cents a barrel.

In June the deliveries amounted to 1,100,000 barrels and the price was 30 cents a barrel. The Agency companies oil is practically all of the lower gravities.

Brown-Walker-Simmons Co.

AGENTS

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LATEST QUOTATIONS ON THE SAN FRANCISCO STOCK EXCHANGE

The Stock Exchange shows little change; the bulls are not in evidence; the bears completely rule the range and buyers show but little sense. Amalgamated shows a jump of seven and a half or so; and he who buys this stock is wise, for it to par will likely go. (How different from A-s-s-o!) The dear old public will not buy when stocks are cheap as they are now; they'll wait until the market's high, to sell again when stocks are low!

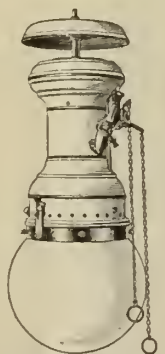
Following are the latest prices on oil stocks recently quoted on the San Francisco exchange—it might be noted that the above review about covers the ground:

Company	Bid	Asked
Associated Oil Stock.....	44 50	
Claremont	60	
Coalinga Central.....	20	
Coalinga Mohawk		95
De Luxe.....	70	
Empire	75	
Illinois Crude		07
Maricopa 36.....		20
McKittrick	09	
Monte Cristo.....	1 40	
New Penn. Petroleum.....		57
Paraffine		50
Palmer	30	35
Pyramid	09	
Republic	26	
Silver Tip	65	
S. W. & B.	18	
Turner	70	
United Oil	25	
West Coast (pref.).....	75 00	100 00
W. K. Oil Co.....	1 80	

LOS ANGELES QUOTATIONS

The latest quotations on the Los Angeles Exchange show quite a lively appreciation of oil values as is evidenced by the following list:

Company	Bid	Asked
Amalgamated Oil.....	82 50	83 50
American Crude Oil Co.....		30
American Pet. Co. (com.).....		50 25
Associated Oil.....	43 75	44 00
Bear Creek Oil & M. Co.....		61
Brookshire Oil.....	50	
California Midway Oil Co.....	09 1/2	10
Central	1 00	1 25
Columbia	1 05	1 12 1/2
Continental Oil.....		19
Enos Oil Co.....	04 3/4	
Euclid Oil Co.....		29
Fullerton Oil.....	3 00	5 00
Globe	04	10
Jade Oil Co.....	07	
Maricopa Queen Oil Co.....	15	30
Mascot Oil Co.....		75
Mexican Pet. Ltd. "Pfd.".....	101 25	101 50
Mexican Pet. Ltd. "Com.".....	83 00	
National Pacific Oil Co.....	04 5/8	04 3/4
New Pennsylv. Pet. Co.....	55	60
Olinda Land Co. (Oil).....	38	40
Palmer Oil Co.....		45
Penn. Midway Oil Co.....	07 1/2	
Rice Ranch Oil Co.....	1 15	1 30
Union	98 12 1/2	98 37 1/2
Union Provident Co.....	97 75	97 87 1/2
United Oil Co.....	21	25
Western Union	70 00	100 00



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Written Especially for the California Derrick

By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer.

(Concluded from July Review)

Case 4. Drilling Through Water Sand or Running Sand

In the case of encountering sand layers in drilling, we meet an entirely new set of conditions. For while in drilling through solid and coherent materials—clay, shales, sandstones or hard shells—the actual drilling, that is, the disintegration of the material, is the prime factor, and its removal from the hole by baling or flushing a secondary consideration, in the case of soft sands we have a material already disintegrated, but of such a character that its removal from the hole offers considerable difficulty, and is possible only under certain conditions. The reason for this difference is found in the peculiar character of sands and of sand beds.

The sand found at depth is of the same character as that found on the surface, and consists in general of a mass of more or less angular fine fragments of quartz, feldspar and other minerals. The relative weights of these minerals vary considerably, but all are much heavier than water, so that sand poured into water sinks rapidly, and can be kept in suspension only by strong agitation, or by rapid upward current.

When sand settles out of water, the coarser particles fall fastest and reach the bottom first, while the finest grains will be found in the top layer. These fine particles, however, tend to work down into the interstices between the coarser, wedging them into place, and finally forming a close and solid mass. The hardness of this mass as it finally comes to rest will depend, not on the hardness of the sand grains, but on their angularity, and on the proportion of grains of different sizes, the hardest mass being formed by a sand having highly angular grains, of sizes grading evenly from coarse to fine. On the other hand, sands have very round grains, or which consist of particles of an even size, are apt to be "quick", that is, not to form a solid mass, but one of which the grains are only in contact and not interlocked, so that they roll on each other when pressure is applied at any point.

Sharp sand, when wet and thoroughly compacted, forms a hard and dense mass which strongly resists force applied from above. For instance, if you strike with a hammer the

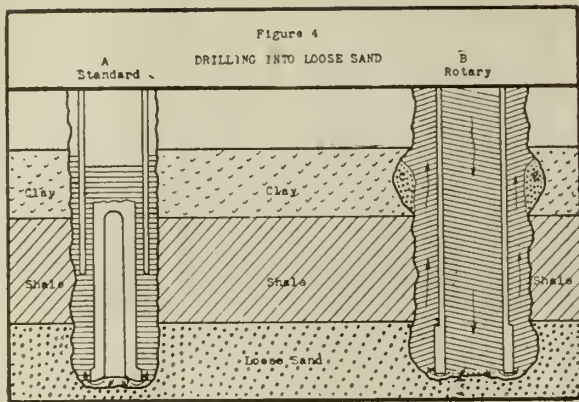
surface of a bed of wet sand, it is only dented on the surface, while repeated blows will merely pack the sand more closely instead of pulverizing it. For this reason, sand is often harder drilling than sandstone, for while the latter is hardened by the cementing agent into a non-elastic mass, which is ground to powder by blows of the drill, loose sand has sufficient "give" to absorb the force of the blow, and may be hammered almost indefinitely without being much altered.

In fact, about the only effect of the tools on a sand pack in the bottom of the hole is due to the agitation of the drilling water, by which the sand is washed loose and brought into suspension. And where only clean water is present at the bottom of the hole, this temporary loosening would be of little effect, as clean sand settles out and repacks before it can be gotten into the baler. But with more or less mud in the drilling water, the sand, as it is washed from the bottom by the motion of the tools, is mixed with the mud into the consistency of a quicksand, that is, the mud tends to hold the sand in suspension until the mixture can be baled out. Making hole through sand with the standard tools will decrease in difficulty in direct proportion to any increase in percentage of mud in the drilling water, and in some cases it has been found desirable to run soft clay into the casing in drilling through sand streaks.

The action of the standard tools on sand is shown at "A" in Figure 4. Here the tools are supposed to be making the down stroke—the drilling water is being forced out from under the face of the bit, and is washing off and lifting the surface of the sand. In this case the effect of the actual blow struck by the bit is almost negligible.

The rotary makes hole through packed sand much more readily than the standard tools, as it depends on the erosive action of running water, to which sand is highly subject. A bed of wet sand may be strong enough to support a heavy load, and hard enough to resist a strong blow, yet a gentle stream of water will cut into it rapidly.

The action of the rotary in drilling through sand is shown at "B" in Figure 4. This is strictly a washing or flushing

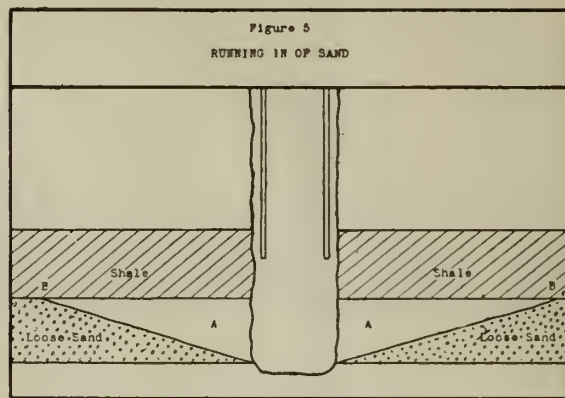


action, the stream which passes out from under the shoe scouring up the sand, which is continuously lifted and carried out by the stream of water rising around the drill pipe. The only requisite is that this water shall rise in the hole faster than the rate at which the coarser sand particles will sink—if this speed is not maintained, only the finer sand grains will come to the surface, while the coarser will lodge in the first enlargement of the hole (where the rate of upward flow is of course slackened), and may even bridge over and freeze the drill pipe. However, as the collection of any quantity of sand at any point (as at "C" in the same figure) partly closes the hole, and thus increases the speed of the stream at this point, such bridging is not likely to take place unless the circulation is interrupted.

Running Down of Sand. The principal difficulty in passing through beds of incoherent sand is not so much in the way of making hole, as of maintaining the hole once it is made. Damp sand will support a great weight applied from above, but has no power of resistance to the action of water from below, or on an unsupported side. A sand bank close to the bank of a stream, where the sand is kept damp by capillary attraction, will support a weight of many tons, so long as its foot is protected from the action of water by a shelving beach. But let the water rise to where it touches the foot of the bank, and this will be almost instantly undermined and will come down with a run. And if the whole bank be covered with water, it will literally melt down, sinking to a low, round-mound.

Such action always and necessarily takes place on the wall of the hole, as fast as it is formed, and makes it difficult to drill through sand with the standard tools without the use of special precautions. By sand you will of course understand only loose or incoherent sand, not hard or cemented sand, which is properly sandstone. Referring now to Figure 5, we will assume that by some means a hole has been made through a sand layer lying below a hard shell. The hole being of course, full of water (at least up to the line of the hard shell), the sand, no matter how sharp, immediately runs down and fills the hole. Supposing that it could be removed by baling as fast as it runs in—it would continue to flow into the hole until its angle of stability under water had been reached. This angle varies with the sharpness of the sand grains, with their sizes, and with the proportions of each size, but in any case makes a very acute angle with the horizon line. So that, if the sand layer were of even moderate thickness, before it came to rest a large amount of sand would have been baled out, and an extensive chamber formed (as at "A", Figure 5). And while the sand, unless actually "quick" or "running" sand, would ultimately come to rest, and no more flow into the hole, before this stage was reached so large an area of roof (see "B-B", Figure 5) would be left unsupported that this, unless unusually thick and strong, would be almost sure to fall and wreck the hole.

Quick Sands. It will be noted that a distinction is here drawn between a merely incoherent sand and a quicksand. This is a convenient assumption, but probably no such distinction exists in fact. All sands are "quick" when lifted by an upflow of water from beneath the surface, or when kept in suspension by agitation. The quicksands found in streams and along the ocean shore are, I believe, always due to springs, or to currents from below, which keep the sand in some slight motion, and prevent packing, or interlocking of the grains. As found below the surface, sands are probably "quick" only under two conditions, one, where the sand is mixed with a



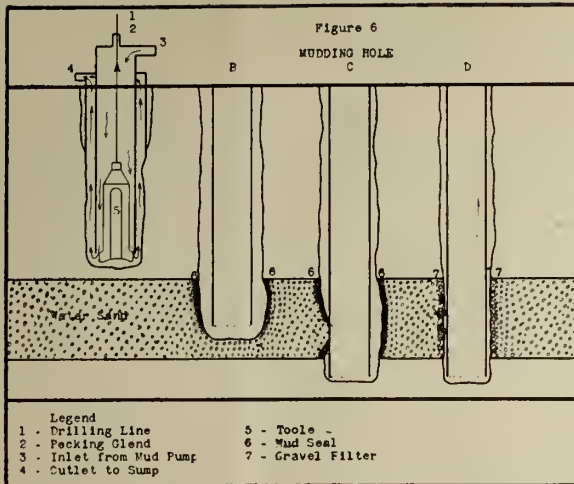
very viscous oil, which lubricates the grains and assists them to roll, while at the same time retarding any tendency to settle and pack; the other where either oil or water carried in sand has a pressure greater than that in the hole, so that a constant inward current is maintained through the walls of the hole. From this point of view, all productive oil sands are quicksands to a certain degree, and it is well known that almost all such sands do run into the hole for a long time, or until a filter is built up around the perforations. Put aside from this instance, such cases are probably rare, and under any ordinary circumstances it may be assumed that, when sand runs into a hole, the entire body of sand in the formation does not move, but only that portion above the stability line, which can flow into the hole of its own weight (as shown by the blank spaces "A-A" in Figure 5).

Walling Up of Hole. The actual maintaining of a hole through water sand, up to the time when the easing is landed, is brought about in one way only—by plastering the wall of the hole with fine clay or "mud". This may be done, with the standard tools, merely by using a certain amount of clay with the drilling water, or it may be done by the so-called "circulation" system (see Figure 6). A thin, creamy mud is used instead of drilling water. This is pumped in through the casing head (see "A"), flows down the casing, around the tools, and up the hole outside the pipe, as in the rotary system. At "B" the tools are shown penetrating a water sand. The hole being full to the top, the pressure at the bottom of the hole is outward (unless artesian water has been struck), and therefore a certain amount of the mud is being forced into the sand on the wall of the hole. As this mud penetrates the sand, the solid matter is filtered out and lodged between the sand grains, cementing them into a solid mass, and forming a water tight layer, probably several inches thick, and capable of bearing considerable weight. This method has been used, with the best results, on the sand beds of Cat Canyon.

Circulation need not be used, on thinner sand layers, if clay is dumped or run into the hole in sufficient quantity to keep the drilling water of a creamy consistency. Provided, however, that a sufficient depth of water MUST be carried in the hole to overbalance any pressure of water in the sand, and keep the current always setting outward through the wall of the hole. And the operator should bear in mind that, until the string with which this sand has been passed is landed, if the hole is at any time baled down below this level (that is, low enough to reverse the direction of pressure), the wall at this point is very likely to collapse and freeze the string.

In using the rotary it is less necessary to drill with mud, as the upward current will keep the hole clear temporarily, and the mud formed from the next streak of clay will plaster it up. But the use of mud on sand streaks is a wise precaution, even with the rotary, as it is quite possible for the channel formed by the passage of clear water to be entirely on one side of the pipe (see "C", Figure 6), so that even a later walling up would leave a considerable weight of unsupported sand resting on one side the string, ready to crowd it out of line with the first tremor of the earth's crust, while if mud is used all the way down, the hole is wallied up as formed, and therefore must be concentric with the cutter and drill pipe.

When flowing water is encountered in loose sand, the plastering of the wall in either of these ways is impossible, as the current or water through the wall necessarily sets inward, so that the mud would be washed away from the sand



instead of into it. In such case the only hope for saving the hole is that the sand may contain enough gravel or grit to form up a filter around the hole (see "D", Figure 6), thus giving the wall enough stiffness to stand alone. This of course requires the removal of a large amount of sand washed out of the coarser material. The use of cement under pressure for shutting off artesian water has been recommended, but I do not know of any case where it has been successfully tried.

Entering Oil Sand. The first serious drawback to the use of the rotary system, a drawback which adheres also to the use of the standard in some cases, is found in the difficulty of determining when and where sands carrying oil are met.

At "A", Figure 7, the cutter is just penetrating the top parting layer, and entering a sand containing dead oil, that is, oil under no greater pressure than that given by the head of water in the formation. The hole being full of water, while the water level in the formation is some distance below the surface, the pressure of water on the wall of the hole is outward, and some of the drilling water or mud is escaping into the wall wherever this is porous enough to permit its passage.

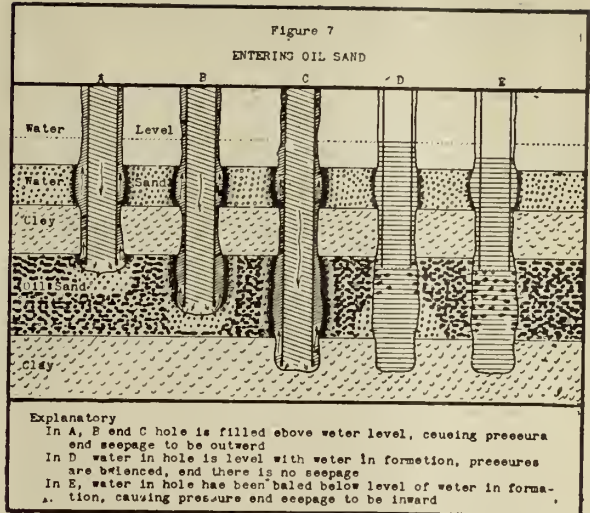
As the drill pipe enters the oil sand, instead of oil running into the hole, water will necessarily run out of it, forcing the oil back through the sand, and no oil will be brought to the surface except such as clings to the sand grains. And if the hole is deep and drilling slow, or if the unbalanced pressure inside the hole is high, causing a rapid flow of water, it is not merely possible but extremely likely that the sand will be washed perfectly clean, and not a trace of oil come to the surface. This is particularly likely to be the result if the oil is very fluid, or if the bottom of the hole has a high temperature.

At "B", Figure 7, the hole is going down through the oil sand, sealing itself off as it goes, by the infiltration of mud into the walls, and at "C" the hole is through the oil sand, and is lined with a layer of mudded sand, some inches thick. This wall is permanently sealed, as because of the much greater surface attraction of minerals for water than for oil, even considerable outside pressure of oil, on baling down the hole, will not force the oil through this mudded layer, and in fact, oil so sealed off can never after enter the hole, except under a pressure sufficient to collapse the wall at this point.

It should be noted that in drilling with the standard rig, with the hole full of water, the same difficulty is met, the outward flow of water tending to wash back the oil. However, in this case the water is less likely to be muddy, and thus the oil sand is less likely to be permanently sealed off, leaving the chance that some oil will enter the hole the first time it is baled down.

In using the standard rig as it is ordinarily used, with the water pressure the same inside and outside, the direction of flow is altered every time the well is sand pumped (see "D", Figure 7), and as the oil would tend to flow into the hole every time the water level inside was reduced (see "E", Figure 7), the discovery of any oil encountered is made almost certain.

These remarks, of course, apply only to prospect wells, drilled in unknown territory. In developing known territory, it may be assumed that the location as to depth of oil bearing strata is known, approximately at least, though owing



to the vagrant and uncertain character of the beds in which oil is found, this assumption sometimes fails in practice. Many holes of both kinds, though principally prospect wells, have undoubtedly been abandoned as barren, when they have actually penetrated productive layers, several very striking instances of later discoveries in "dry" holes being on record. It is safe to say that no hole, no matter how unpromising in appearance, should be abandoned without having been baled dry, or as near this as conditions will permit, before each string is cemented or landed. And even this precaution may readily fail to discover oil which actually exists, if the hole is much mudded, or if water cannot be entirely exhausted.

Shutting Off Water. Any rotary, flush or circulation system, or any system which carries much mud in the hole, is defective in one very important particular—that it is impossible to shut off water dependably in a hole so drilled. This deficiency has its origin in the layer of slime left on the wall of the hole, and which is the inseparable concomitant of any circulation system.

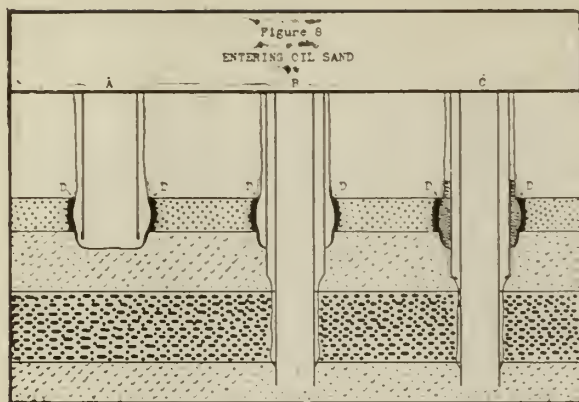
In "A", Figure 8, a rotary hole is shown, carried into a water tight layer overlying an oil sand, and in which it is necessary to land a string and shut off water.

In very favorable cases, as in a thick layer of clean, soft clay, a landing may be made by running a short distance into the clay with standard tools, driving the pipe as far as it will go, and then entering the oil sand with standard tools and a smaller string. (See "B" Figure 8. But this method, while once very common, is now but rarely depended on except for very shallow holes, cementing being practiced in almost all cases.

In "C", Figure 8, the cement is shown in place, casing drilled out, and oil sand entered with a smaller string. It is assumed that the hole was carefully cleaned, and the cementing job properly done, hard and tight. The hole has been tested before entering the sand, and found dry, and it is assumed that the job is permanently tight, but this may not be the case.

In drilling a rotary or other flushed hole, the walls of the hole are necessarily covered with mud. This layer will be thickest where the walls are most porous, and therefore where the most water has seeped out, and thinnest where the walls are impervious. But that such a layer coats, with a thickness varying from a fraction of an inch to several inches, the entire wall of the hole, cannot be doubted. Indeed, the effectiveness of any flush system depends, to a large extent, on the formation of such a layer.

It is assumed, when the hole is washed out, prior to cementing, until the water flows clear, that all mud has been removed, but this may well be doubted. A layer of mud formed by slow infiltration into a porous body, such, for instance, as may be observed on logs after down muddy rivers, is very dense and tough, and while it may be removed by a strong jet of water directed against it, is very little affected by a gentle flow over its face, even when long continued. And it will be remembered that, in circulating prior to cementing, only a very low speed can ever be given to the circulating water, and that this acts for but a short time. It is almost certain that such circulation seldom does more than wash off the softest slime from the surface, leaving the body of the mud layer untouched. And it is almost inconceivable that,



in the class of formations in which the rotary is used, an unbroken ring of clean wall, even a narrow one, should be obtained by such washing, in more than the rarest cases.

We will say, then, that in this instance a layer of mud is left against the wall. The cement is poured, and sets solid and tight, but it does not contact with the wall, but only with the layer of mud (see "D D", Figure 8). This mud, while firm enough to hold up the cement, is not actually solid, but is subject to slow movement, so long as it remains wet, if heavy pressure is applied to one side or edge. And as it is under water, and protected from the air, it cannot dry by either evaporation or absorption, but must remain in its original condition indefinitely.

Such a job as this may remain tight for a long time and then suddenly fail, or it may commence to leak soon after the well is put to producing. When first cemented, and before any oil is pumped out, it is safe to say that, in most cases, the pressure on the two faces of the cement will be about equal. But as oil is pumped out, a gradually increasing pressure is felt on the water side, or rather, the pressure on this side remains stationary while the pressure on the oil side is decreased. For even though the oil reservoir communicates at some point with the outside water, as is usually the case, the resistance to flow through the formation from one side to the other is sufficient to account for a wide difference of pressures between the two sides. And as the unbalanced pressure increases on the water side of the cement seal, water is gradually forced into the mud filled joint crack, displacing the mud and forcing it out of the other side, until finally a channel for the passage of water is formed. And no matter how small this channel may be at the start, the erosive effect of water flowing through it under high pressure would soon enlarge it to the point where the effectiveness of the cement seal would be entirely destroyed.

This defect of the flush systems is almost sufficient, alone to bar them from use in finishing a hole into the sand, or in making hole for any cementing job, the later destruction of which would endanger the well. But it should be noted that the same difficulty exists with standard tools, though to a less degree. That it is less, is due to the much smaller amount of mud in the standard hole, and to the fact that this mud is only in contact with a few feet at the bottom of the hole, while the wall above is in contact with water which must be clean, as it lies dead and has unlimited chance to settle.

But with this possibility in view, and considering the expensive and often disastrous results from the failure of a cement job, the greatest care should be taken in preparing the hole for cementing, for instance, to circulate under the highest pressure obtainable, to raise and lower the casing repeatedly, for several feet at least, while circulating, and to continue washing so long as any sediment is raised by the circulating water. These done, the possibilities of care in this direction have been exhausted, and the results must be left to chance.

Ships to El Segundo

Standard Oil has begun shipping San Joaquin Valley oil to El Segundo Refinery, via San Francisco, thence by tank steamer. The first cargo thus shipped totalled 75,000 barrels and was delivered at the new long wharf at El Segundo.

When visiting Los Angeles and tired drop in to 560 I. W. Hellman Building which is the loafing room of the J. F. Lucey new offices, I. W. Hellman Building, Los Angeles.—Adv't.

Government's Second Suit

The Government is about to file a second suit against the Southern Pacific Company to recover, etc., etc.. This second suit aims to recover some 70,000 acres of oil lands located in the Conlinga and Midway Fields and roundly estimated in value at any number of hundreds of millions the correspondent feels like putting down. This suit is the beginning of those against the patents which were exercised in taking up mineral lands instead of agricultural lands as they were warranted. The suits are guaranteed to interest the public, give the newspapers material for editorials and space, and to cost a lot of money. Fiddle-dee-dee!

History of An Interesting Development

A particularly good review of an unusual development in the marketing of oil is given by the Los Angeles correspondent of the Oil Paint and Drug Reporter. The facts are so clearly stated that we quote the article in full:

A peculiar situation has arisen over the plan generally adopted among many producing companies in "cleaning" their oil before delivering it to the marketing companies. Much of the oil in some districts contains a certain amount of sediment which it is necessary to extract before the marketing companies will accept it. It has been the custom of the operators to "steam" the oil, thereby causing the sediment to settle and enabling the pure oil to be taken off from the top of the tank or snuff hole. In this process a certain quantity of the volatile matters in the oil have necessarily passed off in vapor, and the gravity of the oil has been reduced, in some instances, several degrees. This fact has caused the Standard to issue notice that it will hereafter receive no oil under 18 degrees in gravity, and the company has abrogated its contracts with several companies from which it was buying oil. But this is not the most serious part of the business. Scores of producers have been treating their oil and have maintained the gravity above the 18-degree point, against which no complaint could be made by the purchasing companies.

However, in the course of the business during the dull times and the reign of low prices, the producers have sought to economize at every turn and save all they could from their product. Some ingenious producers evolved schemes of one kind and another to condense the fumes of the oil evolved during the "steaming" process, and in this way extracting considerable quantities of high-grade gasoline—a commodity which at the present time is in big demand on the coast and finds ready markets at constantly increasing prices. The producers have been quick to see the possibilities involved in making a highly profitable use of something that has heretofore gone entirely to waste and the installation of "topping plants" and "condensing plants" has become a very popular industry, and scores of producing companies have thus built up a thriving gasoline business, and scores of others are making arrangements to do the same thing.

Now comes the announcement that no oil will be accepted by the Standard—and it is understood the Union and the Associated have adopted a similar course—that has been "treated." The fact that the producers are now utilizing what was once an absolute waste is not taken into consideration. The fact that the gravity of the oil is maintained has no weight. The purchasing companies insist that their contracts call for "crude oil" and assert that oil is not "crude" if anything has been taken from it, which is probably technically correct. It is of no use to argue that this gasoline which is now saved by the producer has heretofore passed off in the air and lost. It is now being saved and the purchasing concerns want it, claiming they are buying not only the oil, but everything that is in it. The Union and the Standard are refusing concerns and large marketers of gasoline, and if there is any gasoline in oil as it comes from the ground they will insist on having it. What the producers complain of is that in the process of putting the oil in condition so the purchasing companies would take it at any price a method was discovered of utilizing a waste material, and now they are forbidden to make use of the ideas evolved in their own brains.

J. F. Lucey's new Los Angeles Offices—552 4-5-6-7-8-9 and 560 I. W. Hellman Building.—Adv't.

California Production for and Field Operations During August, 1912

As was shown in the quick summary of conditions in August given in our last issue on the editorial page, consumption made a big gain. Production did not; it increased, but the increase was small, totalling 133,694 barrels over the output of July. There was, however, a general gain in production in all the fields, with the single exception of Kern River. There was an increase by one in the number of rigs built, the total for Aug. being 71. Four more wells were drilling at the end of August than thirty days previous: July 408, August 412 wells drilling. The increase in number of wells producing totalled 38; there are now 5556 wells on production in this State. As compared with 64 wells completed in July, August shows 82 completions, an increase of 18. One less well was abandoned in August than

July: July 9 abandoned; August 8. The gross production for July was 7,560,748 barrels; for August 7,649,442 barrels of oil. Total consumption for July was 6,982,946 barrels; for August, 7,314,213 barrels. The daily average production in July was 243,895 barrels; in August, 248,208 barrels; increase in daily average production, 4,313 barrels.

Daily average consumption in July aggregated 225,256 barrels; in August, 235,942 barrels; gain daily average consumption of oil in August, over July, 10,686 barrels. Daily average surplus in July, 18,639 barrels; in August, 12,266 barrels. Total stocks July 31, 45,022,460 barrels; total stocks August 31, 45,402,689 barrels; total gain instocks, 380,229 barrels of oil.

Following is appended our regular monthly report:

County	Rigs Comp.	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month
Kern River	10	6	1644	11	2	1,051,365
MoKittrick	14	14	217	9	1	539,880
Midway	24	127	682	24	..	2,182,187
Sunset	4	27	264	7	..	540,299
Coalinga	8	72	864	7	..	1,679,318
Watsonville .....	..	1	5	..	..	3,720
Arroyo Grande .....	..	1	..	..	..	..
Lompoc .....	..	3	24	..	..	95,350
Santa Maria	1	27	164	4	..	491,027
Summerland .....	..	1	122	..	..	5,605
Santa Paula	4	22	297	6	..	67,366
Newhall .....	..	3	78	..	..	9,706
Salt Lake .....	..	14	285	1	..	220,372
Los Angeles .....	..	..	401	..	5	33,835
Whittier-Coyote	3	25	147	1	..	87,359
Puente .....	..	1	56	..	..	2,480
Fullerton-Brea Canon ..	..	44	272	4	..	576,233
Lost Hills	2	22	34	8	..	108,340
Salinas Valley .....	..	..	..	..	..	..
Monterey .....	..	1	..	..	..	..
Repetto .....	..	1	..	..	..	..
	70	412	5556	82	8	7,694,442

Summary

	Barrels.
Stocks, July 31, 1912	45,022,460
Production, August, 1912	7,694,442
	52,716,902
Consumption, August, 1912 ..	7,314,213
	45,402,689
Stocks, August 31, 1912	45,402,689
Daily Average Production	248,208
Daily Average Consumption	235,942
Daily Average Surplus	12,266

July Exports From San Francisco

The total exports from San Francisco in July amounted to 23,719,948 gallons of oil of all kinds excepting crude only, with a value of \$782,470. No crude was exported in July. The following table shows the exact shipments of the other grades of oils from this port during the month under discussion:

	Quantity in Gallons	Value
Crude .....	..	..
Illuminating	11,964,306	\$590,160
Lubricating and Paraffin	81,115	16,927
Napthas, Gasoline, etc.,	13,489	2,235
Residuum, gas oil and fuel oil, etc., ..	11,661,038	173,158
Total July Exports and Value	23,719,948	\$782,470

August Exports From San Francisco

Up until the end of August 126,628,864 gallons of all kinds of mineral oils, valued at \$3,557,521, had been exported. In neither July nor August were there any shipments of crude, which appears to be getting too valuable to ship before extracting the lighter elements, and which is to a very material degree being displaced by residuum, the cheaper, safer and really more desirable fuel. August was an "off" export month, running only about half the shipments and value of the July exports. Whereas July's shipments in toto were nearly 24,000,000 gallons, those for August were a little more than 11,000,000 gallons less—that is they totalled less than 13,000,000 gallons. The values were in proportion: July exports were valued at \$782,470, August exports at \$342,183. The average monthly shipments from San Francisco since the first of the year total 15,828,608 gallons; the average value of these shipments is \$447,015.

Following is our regularly compiled table showing August shipments and values in detail and total shipments and values of each kind of oil exported during the first eight months of the year, and the grand totals thereof:

	Quantity in Gallons	Value
Crude .....	..	..
Illuminating	4,420,987	\$205,300
Lubricating and Paraffin	27,540	6,523
Napthas, Gasoline, etc.,	6,306	1,000
Residuum, gas oil and fuel oil, etc., ..	8,259,350	129,360
Total for August	12,714,183	\$342,183

Eight Months Ending August, 1912

	Quantity in Gallons	Value
Crude	17,977,725	\$ 256,250
Illuminating	56,713,810	2,443,600
Lubricating and Paraffin	430,074	89,045
Napthas, Gasoline, etc.,	114,910	22,073
Residuum, gas oil, fuel oil, etc.,	51,592,345	766,553
Total Exports and Values	126,628,864	\$3,577,521

Agency's August Sales

The Independent Agency's sales during August amounted to 1,300,000 barrels, a gain of a clear 100,000 barrels over the July deliveries. According to the Agency report the net price of this oil to the producers was 34 cents per barrel, an increase of 2c per barrel over July. The Agency recently sold 14,500 barrels of fuel oil to the Government to be delivered at Yerba Buena fuel station on San Francisco Bay. The price is stated to be the unusually low one of 69 cents per barrel and it is not so much the price but the fact that the Agency has been given the contract which causes most comment.

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The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry, to which it is dedicated, for the promotion of truth and in the aid of progress.

THE NEW POSTAL LAW

The Postal law enacted August 24, last, should be of great benefit to the entire country. This law compels newspapers and magazines to set forth fully their correct ownership. In the case of daily newspapers the real circulation, that is, the real number of bona fide, paid, subscribers must be set forth and sworn to before a notary. This should prevent fraud in securing advertising on a circulation statement that is all too often at present not founded in fact. It is made unlawful, also, for newspapers and magazines as well to publish any matter in their news or editorial columns, for which any money or other valuable consideration has been paid or promised, unless such matter is plainly marked "advertisement" at the conclusion thereof. Conviction of breaking this law is punishable by a fine of from \$500 to \$1000.

These laws should be looked upon by the general public as a Godsend. They cannot well be evaded and detection in case of attempted evasion means something. When the postal laws are broken there is no let-up until the guilty are punished.

* * * * *

THE NEW ERA

Less than one month ago there came into New York Harbor, amid the frenzied tooting of whistles of the smaller craft and the wildest shriekings of steam sirens from the larger vessels, the first Diesel-engined ocean liner ever to enter that historic water way. The vessel was the "Christian X" of the Hamburg American line. Her cruise had led from Hamburg to Havana, thence to New Orleans by way of Vera Cruz and Tampico, and from New Orleans to New York. Her average speed was 11.01 knots an hour but she is fully capable of developing 13 knots per hour.

The "Christian X" is an ocean liner; she is 370 feet long, 53 feet beam, and carries 7,400 tons load. Her fuel capacity is 1,000 tons of oil and her consumption per day amounts to but ten tons, so that she is capable of running 100 days without putting into port for fuel; and 100 days is considerably more than a quarter of a year. There are only ten men employed in the "Christian X's" engine room. There are, of course, no coal bunkers, boilers, furnaces, stokers quarters or stokers, coal passers quarters or coal passers; and, what a difference in cleanliness in addition to all this extra space!

Hearken unto this, reader, and awake to the early developments of the Twentieth Century. It is a quotation from the New York Herald:

"Instead of the conventional upper and lower berths, the staterooms of the Christian X are equipped with two berths, or, rather, beds, both on the same level. In the daytime they are converted into couches. Each room is equipped with shower baths and other conveniences, all of which is made possible by the saving of space due to burning oil for fuel.

"It is estimated that the saving in money for a trip of 100 days by the Christian X over a steamship of the same size would be approximately \$13,000.

"The Selandia is the sister ship of the Christian X, and in the service of the Danish East Asiatic Com-

pany has made a notable record. On February 22 last, she cleared at Copenhagen, touched at London, Suez, Penan, Singapore and Bangkok, Siam. She returned by way of the Kiel Canal, reaching Copenhagen in the early part of July last.

"With the success of these two motor-ships the building of this type of vessel has become an established industry. There are rumors of many vessels proposed and it is certain that the Hamburg-American line is at least considering the acquisition of one or more.

"The Christian X will return to Hamburg from New York and will then be placed in the Atlas service, re-turning again to New York. She will revisit New Orleans considering the acquisition of one more.

Hamburg-American line will definitely decide in which branch of its service she will be placed.

Yes, the Diesel engine is here and it is here to stay. It is here to **displace coal with oil**. Not only on water, but on land. We have already published a photograph of the "Selandia," sister ship to the "Christian X". Soon we expect to publish a photograph of a new car running on power derived from Diesel engines and converted on the car itself into electricity. Such a car is already in existence. It will be of interest to oil men to see this latest development in fuel oil-consuming engines. But, it is not chiefly to this that we care to call attention; it is to the fact that a great many "Selandias" and "Christian Xs" are to be built.

The Panama Canal will make a direct waterway from Europe to the Pacific Coast and the vast and distant Orient, and, all these oil consuming vessels will provide an outlet for the surplus oil of California that will tax the utmost efforts of California to keep even with the market. This will not come all at once—but it **will come**, and it will come before many operators realize what is upon them. As matters stand today, San Francisco, with what is unquestionably the finest harbor in America, if not in the world, has not enough docking space for the ocean traffickers that enter the port daily. A great era of expansion in trade is upon us, and, when the canal is opened, the whole Pacific Coast will undoubtedly witness and participate in an extraordinary growth in population as well as in business. We have pointed out many times ere this that when the canal is opened there will undoubtedly be a big immigration to California direct from Europe, and a steady travel and trade increase; and not the least of this will be in vessels propelled by Diesel engines or engines of Diesel design. Unquestionably, again, fuel oil burners will make up the majority of bottoms passing through the canal—and they will consume, doubtless for a considerable period, much more oil than the Diesel-engined vessels. But, beyond a range of question, there is to be a vast increase in the use of fuel oil when the canal is opened for inter-oceanic traffic. The time is at hand when the world consumption of fuel is going to jump—and California's oil industry is going to profit directly thereby.

When our Bakersfield contemporary had no thought but of each incoming gusher, the California Derrick was pointing to the larger markets of the future, to be realized by the growth of the use of engines of Diesel design. We are not a little proud to think that the day we foresaw is already here; that the "Christian X" the "Selandia" and other internal combustion ocean liners have made a fact out of what was then regarded more a possibility than a probability.

* * * * *

FACTS NOT GENERALLY KNOWN ABOUT THE OIL BUSINESS IN CALIFORNIA

How many people—oil operators and investors alike—know that there are wells in California, "The Gusher State", profitably producing as little as one barrel of oil per day? After reading promotion literature of a certain type, one would scarcely believe this fact—which is a fact, nevertheless. The Summerland and Puente wells vie with each other in the matter of small profitable outputs, the daily averages of all the wells in each field during the month of August being less than 1 1-2 barrels, Puente having on an average the smallest producers in the State.

The largest individual wells have been drilled in Midway, but Midway's wells do not average the highest in production. The field of greatest average daily production per well is the Lompoc field—the daily output of all its wells in August was twenty-five barrels per well greater than that of the combined Midway well average. Of course, Lompoc has but 24

producing wells, while Midway has 682, but the average output per well per day is relatively as given. Lompoe's daily average output per well is 128.01 barrels; Midway's is 103.21 barrels. Lost Hills wells average next highest to Midway with an average output of 102.77 barrels per well per day for August. Lost Hills now has 34 producers. Following Lost Hills comes Santa Maria with a daily average well output of 96.58 barrels; then McKittrick, with 80.255 barrels per well per day; then Fullerton, 68.33 barrels per well per day; Sunset, 66.01 barrels; Coalinga, 63.44; Salt Lake, 24.94; Watsonville, 24; Kern River, 20.63; Whittier-Coyote, 19.17; Santa Paula, 7.316; Newhall, 4.013; Los Angeles, 2.72; Summerland, 1.48 and Puente, 1.43 barrels per well per day. These averages do not look very great, rapidly scanned. That is because the number of wells making them is not taken into first consideration. At the end of August the producing wells in this State number 5556; and of this number more than one-fourth are located in the Kern River field and the average production of this immense number of wells is almost 21 barrels per day. Kern River is certainly showing a remarkably sustained output. Midway's 687 producers, making considerably over two millions of barrels of oil monthly, is unquestionably the most impressive feature amongst all the salient production features in this state. We are appending a table which will be of great interest to our readers in enabling them to grasp production facts not heretofore discussed by other publications, in the twinkling of an eye. If we could only have a table showing the average gravity of oils that each district produces the outsider could much better grasp the relative value of the outputs of each field. As it is, the information embodied in the table should be next to invaluable to outsiders who are considering investing here or who already have money invested, as it gives them an insight as to average production per well per day in each field, thus enabling them to strike an average which could reasonably be expected of their wells.

As cannot fail to be observed, the remarkable average daily production per well for the entire State, 44.67 barrels, is brought down a great deal lower than it would otherwise be by the large number of old wells doing but a few barrels per day—quite a few making only one and two barrels each. In 1910 the minimum production per day of all the wells in the State amounted to 42 barrels, although owing to the Lakeview gusher, primarily, the maximum output per well per day ran up during the latter months of the year to 53.8 barrels.

At the beginning of 1910 there were 3986 wells producing. The bringing in of the Lakeview and the 1909 condition of the market, caused a tremendous increase in operations as all oil men know, and consequently, at the beginning of January, 1911, the number of wells producing had been increased to 4746, with an average minimum production per well per day of 44.6 barrels, a gain per well of 2.6 barrels over the minimum record of a year previous. The maximum daily production in 1911, due to the falling off and total stoppage of the Lakeview's flow, was considerably less than in 1910; it amounted to but 48.3 barrels per day as against 53.8 barrels daily at the greatest period of 1910 production.

In the meantime the increase in the number of wells totalled 760. All these new wells were put on production but, owing to the steadily increasing surplus, a good many of them undoubtedly were not made to produce to capacity towards the latter part of the year.

When January 1912 arrived the number of producing wells had increased to 5170, with an average daily production of 47.6 barrels each. This was the average for January of this year, while for August of this year, there were 5,556 wells producing and their average daily output was, as chronicled, 44.67 barrels per well—and this in the face of the general "we must curtail" sentiment.

We have a few other averages available that we feel will be of intense interest to our readers, these concerning the percentage of the production marketed the last several years, and the first eight months of this year. In 1909, 97.99 per cent of all the oil produced was being marketed. It was this fact, indeed, that caused such an increased activity in the early part of 1910. In April 1910, came the Lakeview and that series of famous gushers that drew the attention of the entire world to Midway. This gusher production went into sumps to a very material degree, as is shown by the percentage of oil marketed in 1910—but 85.16 per cent of the total output. The drop in price to consumers in 1911 which was due to the big increased supply, induced a gain in selling, with the result that the proportion of the production sold during 1911 amounted to 87.09 per cent. The gain in the first eight months of this

year has been phenomenal and should be most encouraging to California producers—Independent and extra-independent. The actual percentage marketed of all the oil thus far produced (to August 31) this year, amounts to 93.70 per cent. The last month for which we have our data (August) shows 95.05 per cent of the production marketed. Conditions are, therefore, shown to be vastly better than last year at this time. It is somewhat encouraging to note that but 4.5 per cent of the August production was stored. If the increase in consumption continues the 1909 conditions may soon be paralleled. But the operators of 1912 are not in the same frame of mind that the operators of 1909 found themselves in; and for their own good, be it said. It is not likely, in the face of the big storage, that another "boom" will begin soon. Booms are too costly in their after effects. The business is at present founded on the rock of common sense.

Returning to the subject of averages, we have worked out the well averages in each field for the past month, and the table, which follows, shows to within a tenth of a barrel what each field's well average is:

(NOTE: For the number of wells producing in each field, and the total production of each field for the month under discussion, see page 7, "California Production for and Field Operations During August, 1912"—We are unable to conveniently set this matter up in type owing to the size of our columns.—Ed.)

	Average Prod. per Well per mo.	Average Prod. per Well per day
Kern River	639.51	20.63
McKittrick	2488.	80.255
Midway	3199.68	103.21
Sunset	2046.58	66.01
Coalinga	1966.80	63.44
Watsonville	744.	24.
Lompoe	3972.	128.01
Santa Maria	2994.06	96.58
Summerland	45.95	1.48
Santa Paula	226.82	7.316
Newhall	124.43	4.013
Salt Lake	773.23	24.94
Los Angeles	84.37	2.72
Whittier-Coyote	594.28	19.17
Puente	44.28	1.43
Fullerton-Brea Canon	2118.50	68.33
Lost Hills	3186.47	102.77

The tendency for the past two years, as everyone knows, has been to curtail—to what extent the following facts will make clear. In 1910, there were 1781 wells started, 1019 completed and 139 abandoned. In 1911 there were less than half the number of wells started the previous year; 877 wells started, 825 completed, 129 abandoned. The first seven months of 1912 saw 467 wells started, 455 completed and 68 abandoned. A comparison of the figures shows the relative increase in completed wells as the amateurs have been forced to the wall and real oil men have taken their place—for the good of the industry!

* * * * *

"NAVAL PETROLEUM RESERVE NO. 1." Naval Petroleum Reserve No. 1, consisting of fifty-eight sections in the Elk Hills, is meeting with widespread laughter in oil circles. It is not so much the fact that the Elk Hills land has been reserved for the use of the navy, (as a good tank farm could undoubtedly be erected there, even though it is not the most convenient place in California for a tank farm) but the reports sent broadcast over the country from Washington, that makes the operators smile. For instance, the amount of oil in the reserve was stated to be a modest 250,000,000 barrels. This made some of the less sophisticated operators open their eyes in amazement; of course, not all being expert geologists they could not be expected to know the exact amount of oil below the surface of Elk Hills. Recovery of this 250,000,000 barrels of oil will be a feat quite as great as the Panama Canal construction, but not, perhaps, so spectacular although in all probability entirely as costly. Drilling in the Elk Hills to date has cost, per well, from \$75,000 to \$100,000, unless our data is entirely at fault. It is about 4,000 feet to oil in this district. It is suggested that a few hundred of these wells, producing say 200 barrels per day, could supply the navy's wants in the immediate future. These wells could be drilled between the tanks and thus the land would serve a double purpose—but then, it is still a little early for speculation.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Growth of the Oil Business in America

An interesting fact in connection with the growth of the oil business in the United States, appears through the government report on petroleum. In 1859 the production of petroleum, then known and termed as "coal oil" or as "mineral oil", in Pennsylvania and New York amounted to 2,000 barrels for the year. Ohio, West Virginia and California commenced development work in 1876; Kentucky and Tennessee in 1883; Colorado in 1887; Indiana, Illinois, Kansas, Texas and Missouri in 1889; Oklahoma in 1891; Wyoming in 1894 and Louisiana in 1902. Pennsylvania and New York produced the greatest amount of crude oil during 1891, when 33,009,236 barrels were produced; since then the production has steadily fallen off until in 1911 the total output was only 9,200,673 barrels. The production for California in 1876 was 12,000 barrels for the year. Since that date the increase in production has been very steady through the years until at the close of 1911 the production for California reached 81,134,391 barrels. Oklahoma made the greatest gain of all the fields; Starting off with 30 barrels for 1891, in 1911 the production reached 56,069,637 barrels. The total production of crude petroleum of the United States from 1859 to close of 1911 reached the magnificent figure of 2,598,313,331 barrels of oil. The records for California for 1912 indicate an increase over 1911, and this during a period of what has been practically a shut down for some of the smaller companies through the great oil fields of the State.

Section 7, 21-15 Center of Interest

The Kern Trading and Oil Company's well on section 7, 21-15, is attracting considerable attention from the oil operator and the owners of lands south of Warthan Creek. The well is located in the southeast corner of section 7. The well of the Canadian Coalinga, the only producing well south of Warthan Creek, is located on the west line of section 8, 21-15, just south of the quarter corner of the section. The first well drilled south of Warthan Creek, of any particular note, was the Manchester well, located near the west line of section 18, 21-15, just south of the quarter corner; this well was drilled to 2,620 feet and abandoned; at 1,655 feet the bit passed through 90 feet of oil sand, showing considerable oil; but the manager went for a lower sand and lost the hole. The Boycechester Oil Company's well No. 1 is located 300 feet south of the Kern Trading and Oil Company's well; this hole was drilled to 3,015 feet and had a good showing of oil at about 2,800 feet. The Best Yet Oil Company's Well No. 1, located on the south half of lot 7, section 18, 21-15, was drilled to 1,800 feet and suspended for lack of funds. The Consolidated Oil Company drilled in well No. 1 in the northwest corner of section 18, 21-15; they, too, have temporarily suspended on account of lack of funds to complete the well. The Associated Oil Company is drilling a well on section 8, 21-15, east of the Canadian well; this hole is now about 1,500 feet deep with 12 1-2-inch casing. The Canadian entered the sulphur water sand at 2,450 feet and finished up at 2,848 feet. The Boycechester entered the sulphur water sand at 1,785 feet, showing considerable gas. The Kern Trading and Oil Company's well entered the sulphur water sand at 2,385 feet; should finish up at about 2,783 feet, as the comparison between the depths of the sulphur water sand indicate that the Kern Trading and Oil Company's well should be about 65 feet shallower. With this well a producer there will be

much relief felt by oil men; and also by the large number of stockholders interested in property south of Warthan Creek.

W. K. Oil Company

W. K. Oil Company, section 2, 20-15. Well No. 14 was drilled to 1,800 feet in 48 working days. The 15 1-2-inch 51-pound screw-pipe casing was carried to 900 feet, the 12 1-2-inch 40-pound Diamond Etna casing is now at 1,800 feet; an excellent showing demonstrating what can be done in deep territory by competent men in charge of the hole, using up-to-date standard drilling tools.

Coalinga Mohawk Oil Company

Coalinga Mohawk Oil Company, section 12, 20-15. Well No. 1 is producing steadily at the 800-barrel per day mark; well No. 4 has been completed and is producing close to 500 barrels per day. Well No. 5 is 1,150 feet deep, 15 1-2-inch casing; they have landed this string and are putting in the 12 1-2-inch string.

Berkeley Coalinga Oil Company

Berkeley Coalinga Oil Company, section 2, 21-14. The derrick and rig for well No. 5 completed; situated 300 feet west from well No. 4; the drillers are rigging up and will spud in next week.

United Development Company

United Development Company, section 17, 20-15. Well No. 1 stands cemented. Well No. 2 is 230 feet deep, 15 1-2-inch casing. The three wells on section 19, 20-15, are producing.

Associated Oil Company

The Associated Oil Company, section 8, 21-15, well No. 1 is 1500 feet deep, 12 1-2-inch casing. Formation following very closely with that of the Canadian Coalinga.

Lost Hills Active

The Lost Hills District is again looking up. The last well completed, that of the Standard Oil Company, section 4, 26-21, indicates a widening of the field; because of this four wells are to be drilled; the rotary will be used to the water sand and from there the wells will be completed with standard tools. The 8-inch pipe line from McKittrick to Lost Hills, and a six-inch from Lost Hills to Belridge, have been completed, and oil is now being delivered to the McKittrick station. The Universal Oil Company, section 32, 26-21, has 32 producing wells; they are running 7 strings of tools on new work, and have 5 rigs under way. Their camp is well equipped and with their oil well tool shop the company is one of the strongest in the district. The Eveniger Oil Company, section 28, 26-21, well No. 1, is 1,910 feet deep, 4 1-2-inch casing; water shut off at 1,880 feet, bailed out and shows good. The General Petroleum Company, section 4, 27-21, has 12 wells completed; reported as making 3,500 barrels per day. On section 5, 27-21, one well has been drilled in and material is on the ground for five rigs; the company has completed a very comfortable camp. The District is showing considerable activity. The town of Lost Hills is growing; an effort is being made to change the post office name from Cutten to Lost Hills. A number of the smaller companies have taken on courage from the success of the larger companies and are resuming operations.

White Creek Oil Company

The White Creek Oil Company, section 2, 21-14, located in the new shallow territory, is pumping well No. 1 to supply the fuel needed on the property. When pumping, the well makes over one barrel per minute. The pipe does not enter the oil

sand; the sand is hard and very compact; stands up in fine shape. The well is tubed to one foot above the oil sand and there is 42 feet of oil sand in the well. After filling the 30-barrel fuel tank, which was filled in 25 minutes, the well made three flows, showing that the gas is drawing the oil from the sand. The oil is used direct from the well to lubricate the machinery, is used in the cylinders of the engine and so is free from silt; a smooth clean oil.

Associated Pipe Lines Company

The Associated Pipe Line Company received 17 head of animals last week to be used on work along the pipe line from the Coalinga field to Port Costa; the operations from this point will reach Mendota. The pipe line is to be uncovered and given a coat of paint, to protect it from the action of the minerals in the soil. Weak spots are to be replaced; in short, the line

will be given a thorough overhauling. The various pipe lines of the Associated are now handled by the Associated Pipe Lines Company. This is a new action on the part of the pipe line companies in the way of prolonging the life of the pipe line.

Standard Oil Company

The Standard Oil Company, section 28, 19-15, re-drilled the bottom of well No. 31. The well is on the beam and reported as doing better than 500 barrels per day. The production appears to be a paraffin "base" oil. Well No. 83 has been completed at about 2,700 feet; in present condition a small producer; as the gas works the sand it may improve. On section 36, 19-15, Sontag well No. 2 has been completed at about 3,700 feet, 6 1-4-inch casing; the well is on the beam doing nicely the gas assisting materially in the production.

SAN LUIS OBISPO COUNTY TEST WELL APPEARS TO HAVE OPENED NEW FIELD

(Written Exclusively for the California Derrick)

The well of the Cedar Spring Oil Company, located on Section 29, 28-17, M. D. B. & M., in the southeastern part of San Luis Obispo County, about forty miles southeast from Paso Robles, has entered oil sand and present conditions indicate that the well may become a producer of oil in commercial quantities. As the well is the first to tap an oil stratum in the new territory, the sand will probably be tested in order to permit the well's projectors to determine whether they will bring it in on the present showing or proceed with the drilling in search of more prolific sands.

The oil is coming into the hole against a water pressure of about seven hundred pounds per square inch, and it is said to be of very high gravity and to have a paraffin base. Most all water has been shut off in the well between 800 and 900 feet with the 12 1-2-inch casing, and the hole is down over 1600 feet with 10 inch casing. For the last 200 feet the bit passed through sands and shales showing tar and oil, and should a test of the well to satisfy the owners that they have oil in their first well in commercial quantities they may decide to cement the 10 inch casing and bring the well in and proceed immediately with the drilling of other wells.

This pioneer well of a new district is located on the San Juan Ranch, which property, together with much territory contiguous to it, has long been supposed to be petroliferous. The geology and paleontology of the country roundabout is extremely interesting. To the careless observer the remarkable cropping exposed by erosion have had no particular significance, but oil men were long ago attracted by them and they have been awaiting with interest to learn the result of the Cedar Spring Oil Company's efforts at opening up the country.

The new territory which will be added to California's proved oil lands if oil is discovered in commercial quantities in this well is generally called the San Juan Oil District, it having taken its name from the San Juan Ranch, through which courses the San Juan River. Probably some of the most spectacular stratigraphic exposures of geology to be found in the State are to be seen on this ranch, and it is but a natural consequence that the field has taken its name from the place where its petroliferous qualities are most evident.

The major anticline of the district, called the San Juan anticline, was first picked up on the San Juan ranch and its strike can be followed for many miles. As is usually the case in California oil fields, this major anticline has a trend north-westerly and southeasterly, with elevations on its apex of from 1000 to 1500 feet above sea level. In general, it is broadly arched, with a slope of from 25 to 35 degrees on its northeasterly flank and a maximum of 55 degrees on its southeasterly short synclinal fold. The discovery well is located about 900 feet to the northeast of the anticline's axis in a flat which has resulted from aggradation of the wash from nearby hills.

While the structural features of the district are very similar to those of Coalinga, no live seepages of petroleum are to be found in the vicinity of the San Juan Ranch, and it is difficult to prognosticate the finding of oil in the underlying strata. However, numerous and copious seepages of petroleum do not denote the certainty of the discovery of oil in large quantities in the underlying strata in their vicinity, nor does the lack of seepages determine that a country having other favorable surface indications of its being oil bearing prove the improbability of the accumulation and preservation of oil in commercial quantities beneath the surface.

The San Juan country was examined carefully by a geologist having a reputation for being a careful observer and a conservative commentator on the qualities of mineral lands, and honor is due him for having located the Cedar Spring Company's well by pure geological observation. The projectors of the successful well deserve great credit for their faith and enterprise in opening up a new field in California, which, though last, may be in the not distant future, by no means least in point of wealth of production if present indications form a basis upon which to judge.

(EDITOR'S NOTE.—The San Juan Ranch is the property of Henry Wreden, and the Cedar Spring Oil Company is operating on a quarter section which has been turned over to it by Mr. Wreden for development purposes. A neighboring ranch owner, a Mrs. McDonald, holds a considerable interest in the company.)

All of the latest news items and issues pertaining to oil can be found in the rest room of the J. F. Lucey Company's new offices, I. W. Hellman Building, Los Angeles.—Advt.

GREAT COMPANIES MERGED

"California Petroleum Corporation" Name of Doheny Companies

The California Petroleum Corporation, capital \$35,000,000, is the new company that has been formed by the merging of the great American Petroleum and American Oilfields Companies, the big Doheny corporations.

The properties of the two companies are among the largest in the State, and owing to the advantageous contracts for the sale of the output, are considered to be worth many millions of dollars. The companies have immense land holdings, both in the Coalinga and the Sunset-Midway districts, and their output amounts to probably 15,000 barrels a day. The American Petroleum has a contract for its product which has several years yet to run, at a price of 60 cents per barrel. The American Oilfields is a member of the Independent Producers' Agency, and was one of the favored concerns taken in and guaranteed a price of 50 cents per barrel for its production. This contract does not expire for a year yet. The combined capitalization of the two concerns is \$35,000,000.

A dispatch was published in the Oil World under date of October 9, to the following effect:

The stock of the new California Petroleum Corporation, that takes over the stock of the American Petroleum and American Oilfields Companies of California, was listed and called for the first time on the New York stock exchange on last Saturday. The new stock opened at 66, at about which which figure it has been selling for the last week on the curb, and closed at 76, a surprising rise for a new security in one call.

The way that the Mexican Petroleum has made good, especially in the face of the political condition in Mexico, has attracted the widest interest to the names of Doheny and Canfield, and gives high standing to any enterprise they are connected with.

The Oil News of the world on files in 560 I. W. Hellman Building, which is the rest room of the J. F. Lucey Company's new offices—553-4-5-6-7-8-9 and 560.—Advt.

Special Reports on Large Corporations

Condition of General Pipe Line and General Petroleum Companies Today

On account of their extraordinary activities, their push and the immensity of their undertakings, the General Petroleum Company and its subsidiary, the General Pipe Line Company, have received a great deal of attention in the press of this State, much of which has been very misinforming; it is for this reason that we have been at especial pains to gather the following facts concerning these two companies — facts, by the way, that have never appeared before in a connected manner, or authorized by the companies themselves as far as we are aware. Our information is strictly from headquarters.

The capital stock of the General Petroleum Company is \$50,000,000 and the authorized bond issue \$25,000,000. Such bonds as have been placed on the market have been sold at par. The holdings of the General Petroleum Company comprise more than 14,000 acres in California, proven and prospective, and 27,000 acres in Mexico, together with water frontage on the Tampico River; of this land 5,000 acres immediately adjoins the property of the Mexican Petroleum Company on which is located their great gusher. The California properties of the company extend from Coalinga on the north to Fullerton. The various fields in which their properties lie are: Coalinga, Kettleman Hills, Lost Hills, Belridge, McKittrick, Buena Vista Hills, Midway district from north of Fellows through and far south of Sunset; Fullerton and Santa Maria. There is also considerable good prospective territory outside the limits of these fields. The company has ninety producing wells with a daily average production of 7,000 barrels of oil—sold to Standard Oil, Union Oil and Associated Oil Companies, and to the Los Angeles Refinery. The company is running twenty-seven strings of tools at this time and they are in operation 24 hours daily. The majority are in shallow, big-well territory; in Belridge, Lost Hills and Midway. In the latter field six strings are being run close to a new gusher on contiguous property to theirs. Capt. John Barneson, E. J. De Sabla and other noted oil men are the controlling spirits of this company.

At the present time more interest is taken in the General Pipe Line Company by the oil public than in the parent corporation. This is due to the fact that the General Pipe Line Company's big oil main is rapidly being rushed to completion from Lost Hills in the north to San Pedro, via Los Angeles. What this outlet to the south may mean to the San Joaquin Valley oil operators can better be realized when it is understood that there is at the present time no oil pipe line through the valley fields to the south. It is an outlet capable of carrying at the maximum 30,000 barrels of oil per day to the southern market and to the ocean trade direct.

The General Pipe Line Company is a \$7,500,000 corporation, some \$4,000,000 of its capital stock being issued. Of the total capital, 70 per cent is owned by the General Petroleum Company. The president of the General Pipe Line Company is Captain John Barneson, also first vice-president of the General Petroleum Company.

The original idea of the General Pipe Line Company was a pipe line that should run "from Midway to San Pedro". The main, 8-inch line will realize this idea to the full, when completed, which should be February First, 1913, at the present rate of construction. The total distance to be covered by the pipe line will be 158 miles. At the present time about 40 miles has been laid and progress is being made at the rate of approximately one and one-third miles per day. The line will be connected at Midway, however, to a 6-inch pipe extending from that section to Lost Hills. This pipe is already on the ground. The average capacity of the Midway to San Pedro pipe will be 25,000 barrels per day, although at maximum 30,000 barrels daily can be forced through it. There are eleven pumping stations to force the oil on its way, distributed at the most advantageous points. These are mostly under construction at the present time. The tankage at the stations consists mainly of 55,000-barrel steel tanks, the majority of which are erected. The company will have a big tank farm near San Pedro in addition to its other storage facilities. A permit has been issued by the Federal Government allowing the company the use of the San Pedro breakwater on which to run its pipe out, and from which it will discharge from "dolphins" to oil burners, carriers, etc. The Company owns the

properties on which its plants are located and its rights of way are complete. The tank farm lands are also owned outright. At the present time a great deal of interest is being taken in the construction work under way. The facts which we have gathered will therefore be of genuine value to both the oil public and the company alike, as an immense amount of "rot" about the alleged operations of both of these companies is constantly appearing in irresponsible papers.

Seaboard Oil and Transit Company

On September 23d, the shareholders of the Seaboard Oil and Transit Company voted the authorization of a bond issue of \$2,500,000. The meeting of the shareholders was held in the Company's offices in Los Angeles and more than 85 per cent of all the outstanding stock was represented there. The officers state that the personal attendance was the largest of any meeting of the company that has previously been held. The bond issue was ratified by unanimous vote. Also, a resolution was adopted endorsing and thanking the officers for their previous acts. The company sent the California Derrick the following statement concerning the meeting:

"The certified statement presented at the meeting showed the total assets of the company to be \$1,708,446.80, against liabilities of \$348,918.59.

"The properties of the company consist of about 3,000 acres of oil land at Panuco, Mexico, and various holdings in the Kern River, Maricopa, Templer and other oil sections of California.

"The shareholders' meeting was very enthusiastic and a number of the stockholders volunteered subscriptions to the first issue of bonds. The bonds will be used to liquidate indebtedness, to acquire additional proved properties and to provide funds for the development of the company's various holdings, particularly the properties in Mexico.

"Arrangements have been made with a number of bond brokers for underwriting a portion of the bonds and \$1,000,000 of the bond issue is being reserved for a European syndicate with which negotiations are under way."

The bonding of the company, following the exceptionally well paid up assessment of recent date, should put it in first class shape. The officers have already sent out a circular to the shareholders enclosing a certificate giving them the right to purchase the bonds at a ten per cent discount with a stock bonus of 200 per cent which should be a most attractive feature in marketing the bonds. The bonds bear interest at the rate of six per cent per annum, and constitute a first mortgage against the Seaboard's valuable properties. They are non-assessable. Already they are meeting with a very liberal subscription from the shareholders, one of the reasons doubtless being the natural desire on the part of the corporation's members to support it and at the same time be secure in their investment; while the marketing of the bonds, too, is made most attractive by means of the "payment down" and so-much-per-month plan on which the Company is offering them to the shareholders only. Not only this, but, as certain shareholders have pointed out, the money invested in the bonds goes directly into the company's treasury to be used in developing its proven properties, so that the value of the stock is raised by the sale of every bond. The company does not, evidently, expect to sell out their entire issue, but rather to dispose of enough to carry them through the stress of development both here and in Mexico until production has been brought to the point where dividends can be paid regularly.

The organizers of the Seaboard have shown themselves very capable, brainy men in the handling of the Company's affairs to date. They have brought the corporation to a point where it is bound to be a success. There is no getting away from the fact that the Seaboard has been exceptionally well handled thus far and that as the same people will continue in the guidance of its affairs, it will continue to be so looked after.

The Company's Mexican lands are considered so valuable that a good well would go a long ways towards making the stock worth par, while their California properties are being steadily brought up in production and the oil is being sold. For these reasons the Company should not find much trouble in placing their bonds unless bond issues with large bonuses backed by good properties are going begging.

Doings of Especial Interest in the Various Fields: Company Reports

West Side Tank Farm

The Standard Oil Company has decided to establish an immense tank farm in the Sunset-Midway field near its pump station on section 1, 32-23, known as station B. Forty-five tanks, with a capacity of 55,000 barrels each, will be put up, and work on ten of these will begin at once. The increased production on the Standard's properties in this field and the large quantities the company is buying makes it advisable to store it in the field. In the winter months this oil flows slowly, and it would be next to impossible to take the oil out of the field fast enough to prevent congestion.—Oil Reporter Correspondent.

Completes Payment on Silvertip

W. P. Hammon, who represents English capital in the purchase of a number of California oil properties, has made the final payment of \$21,000 on the property of the Silver Tip Oil Company, in the Coalinga field. The purchase price was \$125,000. The property consists of 20 acres in the famous section 6, 21-15. The first well of this company came in as an 18,000-barrel daily gusher, and was the sensation of the State for weeks. The production is at present not large. Mr. Hammon has purchased a number of other properties in different fields, and still holds options on others.

Orange Oil Company's Big Well

The Orange Oil Company's No. 3 in Brea Canyon has increased its flow to 1,600 barrels a day. The product is about 30 gravity. The flow is still held back and the present output is being made through a seven-eighths-inch opening. It is estimated if the well was opened up it would easily do 5,000 barrels a day.

Large Gasser

The Associated Oil Company has brought in a gas well on section 20, 31-23 in the Sunset-Midway field that is flowing at an estimated rate of 40,000,000 cubic feet of gas a day. It is one of the heaviest gasers that has been brought in for a year. The gas will probably go to the Midway Gas Company, as that concern made arrangements some time ago to purchase it.

K. T. O. Co.

It is now generally stated that the K. T. & O. will shortly be the sole fuel supply company for the Southern Pacific. The company recently raised its capital from \$1,000,000 to \$10,000,000. From now on it will rush activities to increase its already large output to an extent where the Associated Oil Company will not figure at all as a fuel supply adjunct of the railroad. At least, such is said to be the case and the vast developments of the past year would seem to warrant this assumption, while the alleged hawking of Associated is considered as still another indication in this direction.

Cal. Counties Oil Company has purchased the Casitas Ranch comprising 7,000 acres in Ventura County, for development purposes, and are already drilling on it. The company is expanding rapidly. They recently let a contract for the drilling of ten wells on the La Belle property in Sunset.

The Midway Gas Company's line to Los Angeles is practically completed. Gas will probably be running from the big Buena Vista Hills gasers of the Honolulu Oil Company to Los Angeles consumers within a short time.

Big Gasoline Cargo from Sumatra

The Indian Refining Company, the Shell-Royal Dutch subsidiary, recently received at their Seattle plant a cargo of 6,000 tons of gasoline, imported from Sumatra. This looks like business in earnest. It is competition for the Union and Standard to fight. The "Indian" is said to be preparing to "cover" the markets for refined from one end of the Pacific Coast to the other.

Union's New Oil Carriers

It has lately become known that the Union Oil Company is having four oil tankers, with an aggregate carrying capacity of 275,000 barrels, constructed in England, the first of which is to be delivered in March, 1913. This will add to the present capacity by one half, as the same now totals about 500,000 barrels, carried in 14 vessels. The company is said to be refining about 20,000 barrels per day at present; in all they have six refining plants, the biggest, of course, being at Oleum.

No More Oil Under 18 Gravity

As discussed in another column, the Standard Oil Company has notified the trade that it will contract for no more oil under 18 degrees gravity. This will affect in all some fifty odd companies, not all of which have by any means fulfilled their contracts with the Standard yet so they have considerable time to run. President D. G. Schofield of the Standard is quoted as saying that the company has 21,000,000 barrels of oil on storage in this State, without a pint of gasoline in the whole. As the Standard is a refining Company first and a marketer of fuel oil afterwards, it is natural that with this immense supply of fuel oil on hand it should cease to purchase more lower gravity oil at this time. President Schofield believes that engines adapted to the use of distillate may take the place to a large extent of the gasoline motor, in the early future, so that there will then be no shortage as at present in the motor supply.

J. F. Lucey Co. have moved their main office to 553-4-5-6-7-8-9 and 560 I. W. Hellman Building, Los Angeles.—Advt.

Good Maps

The California Derrick has taken the exclusive agency for Northern California of the Weaver-Tiernan loose-leaf oil maps.

The maps are blue line, printed on parchment paper on a scale of 1 1-2 inches to the mile. They are bound in linen flexible cover with loose-leaf fasteners and show a complete township to a page, each page containing the following data: present ownership of property, oil pipe lines, pumping stations, railroads, wagon roads, wells producing, wells drilling, depths of wells in various parts of the township where development is carried on. Contour lines taken from the U. S. Geological Survey charts that are issued from time to time; bench marks, Government withdrawn land, etc. These township leaves are in loose leaf form, tabulated for easy reference.

Districts are made up in the following books:

San Joaquin Valley

(Fresno, Kings and Kern Counties)

Containing COALINGA, KETTLEMAN HILLS, DEVIL'S DEN, LOST HILLS, TEMBLO, McKITTRICK, MIDWAY, SUNSET, SAN EMIDIO and KERN RIVER Districts.

This book covers 69 townships with an ownership index containing over 1350 names alphabetically arranged giving section, township and range, and page on which property will be found. A general map 24x24 inches accompanies this book, showing all townships in this district.

Price \$12.00 Postage Paid.

The Santa Maria Oil Field map, done on the same plan, costs \$3.00. The Santa Clara Valley fields—Ventura and Los Angeles Counties, giving all desirable data, costs \$3.50, post. are paid. Map book of the Whittier-Olinda fields (Los Angeles, Orange and San Bernardino Counties) costs \$1.50 postage paid. The price of the complete series here mentioned, in one cover, is \$20.00. These maps are the very best on the market. They are used by all the foremost oil operators, Banks, Supply Houses and Marketing Companies. For further information write, wire or phone (Douglas 494) California Derrick, 788 Mission Street, San Francisco, California. Advt.

When in Los Angeles call at J. F. Lucey Co.'s new offices 553-4-5-6-7-8-9 and 560 I. W. Hellman Building.—Advt.

Latest Quotations on the San Francisco Stock Exchange

On October 10th, 1,000 shares of Palmer sold at 26c. and 500 shares sold at 25c.—a genuine buy. This set of sales serves to show the general interest in oil at present. However, 1,000 shares of New Pennsylvania sold at 57c. which denotes considerable confidence in that company at this end of the State. Neww Pennsylvania is a rattling good stock, paying six per cent dividends now and will doubtless pay a good deal more later on. Six per cent on fifty seven cents is about ten per cent per year. A nice investment. Speculative buying has brought Associated up to \$44.50 bid, \$45 asked. There is a general idea that Associated may be divorced by the S. P. Co., with an apparent resultant idea that the stock will then rise. So far, it is all an idea; simply that and no more. Illinois Crude, though making a good output, is not being traded in; the last prices were too discouraging to those holding the stock to have them care to place their shares in the market. United is quoted at 30c., and looks good at that price. Amalgamated at \$85.00 is apparently one of the most attractive buys in the market at present. Union, Union Provident and United Petroleum remain close to par, as usual—there being very little variance in these issues. Mexican Petroleum, Ltd., pfd., still commands more than par, while buyers bid \$87.62 1-2 for common. National Pacific is away down, where it will probably stay for some little time to come. Premier, excellent company though it is, is not being traded; no inducement to shareholders. On the whole, the San Francisco Exchange is devoid of interest and the Los Angeles quotations, while livelier and more appreciative, are by no means what they well might be in a great many cases. The announcement of the Standard Oil Company that they will not purchase any more oil below 18 degrees gravity Baume, affecting about 40 companies, will doubtless depress the market for the shares of these companies to a very material degree. At the same time it will serve to encourage light oil production and consequent rise in the value of the shares of such companies as get and use light oil at the good prices now prevailing, while in case prices advance on the better quality oils, the share valuation advanced will in all likelihood be in proportion. The advance in prices for higher gravity oils is considered very probable.

Following are the latest quotations on the San Francisco Exchange of such stocks as have met with recent attention:

COMPANY	BID	ASKED
Amalgamated Oil	83 00	85 00
Associated Oil Stock .....	.....	45 00
Claremont	60	.....
Coalinga Central	20	.....
De Luxe	70	.....
Empire	75	.....
Home .....	.....	35
Maricopa 36	25	50
McKittrick	09	.....
Monte Cristo .....	.....	1 32½
New Pennsylvania Petroleum	57	58
Oreutt Oil	25	.....
Palmer	25	26
Republic	26	.....
Silver Tip	55	65
Sovereign .....	.....	15
S. W. & B.	18	20
Sunset Monarch .....	.....	1 10
Turner	75	.....
United Oil	30	.....
West Coast (Preferred)	75 00	100 00
Wolverine .....	.....	95
W. K. Oil Company	1 75	2 00

Los Angeles Quotations

The latest quotations from the State's oil center show that interest is not dead there:

COMPANY	BID	ASKED
Amalgamated Oil	84 25	85 00
American Petroleum Company (pfd.)	71 50	72 50
American Petroleum Company (Com.)	50 50	51 00
Associated Oil	43 87½	44 12½
California Midway Oil Company	18	19½
Central	1 00	1 20
Columbia	1 10	1 15
Enos Oil Company	04	.....
Fullerton Oil Company	2 50	5 00
Jade Oil Company	08½	.....
Mexican Petroleum, Ltd. (Pfd.)	99 50	100 50

Mexican Petroleum, Ltd. (Com.)	87 62½	.....
National Pacific Oil Company	02¾	02½
New Pennsylvania Petroleum Company ..	56	57
Olinda Land Co. (Oil)	39	41
Pennsylvania Midway Oil Co.	07½	.....
Rice Ranch Oil Compan	1 00	1 10
Union	98 00	98 25
Union Provident	97 50	97 75
United Petroleum	97 37½	98 00
United Oil Company	31½	34
West Coast Oil (Pfd.)	60 00	.....
Western Union	75 00	.....

Dividends for September

September Dividends were not as large as might be expected, considering September is a quarterly month. The Mexican Petroleum's quarterly was paid in August; it amounts to \$320,000. Mexican Petroleum, Pfd., however, as usual swelled the total payments by California companies. The full payments by listed and unlisted alike totalled \$682,763.78, as follows:

Amalgamated	\$1.00	50,000.00
American Petroleum, Pfd. ....	.005	8,755.50
American Petroleum, Com. ....	.001-3	39,607.00
Caribou .....	.001-3	8,070.30
Central .....	.0075	7,500.00
Claremont .....	.01	5,000.00
Columbia .....	.01	9,992.26
Del Rey .....	.....	3,000.00
Euclid .....	.....	1,750.00
Home .....	.01	5,000.00
Midway Premier .....	.01	5,000.00
Monte Cristo .....	.025	12,500.00
Mount Diablo .....	.015	7,500.00
New Pennsylvania .....	.005	5,000.00
Pacific Crude .....	.10	60,000.00
Paraffin .....	.01	3,000.00
Record .....	.01	5,000.00
Rice Ranch .....	.015	4,500.00
S. F. & McKittrick .....	.01	5,000.00
Sauer Dough .....	.0075	2,992.50
Section Twenty-five .....	.50	20,000.00
State Consolidated .....	.01	5,000.00
Traders .....	.006	9,000.00
Union Oil .....	.006	184,743.60
Union Provident .....	.006	91,402.02
United Petroleum .....	.006	48,450.60
W. K. ....	.02	10,000.00
Western Union .....	.005	5,000.00
Total California Companies .....	.....	\$602,763.78
Mexican Petroleum, Ltd., Pfd. ....	.002-3	80,000.00
Total All Companies .....	.....	\$682,763.78

Pacific Crude for Sale

The Pacific Crude Oil Company's big well on section 32, 31-23 in the Sunset-Midway is still doing between 5000 and 6000 barrels a day. The company ran from this one well during August 197,998 barrels of oil. The contract price is 45 cents per barrel, so it will be seen the income from this well for the month was over \$89,000. It was given out October 1st, that the property of the company, and all improvements, meaning the gusher and a second well now being drilled are for sale. The price demanded is stated as being \$750,000. The reason for the sale is not known as the big well is paying close to \$100,000 a month.

Chemists' Visit

On September 30th, the party of chemists composed of members of the International Congress of applied chemistry visited the Kern River and Midway oilfields. The party was in charge of Dr. David T. Day of the U. S. Geological Survey. Prof. Edmund O'Neill, deau of the College of chemistry, University of California, assisted in entertaining the visitors as did Dr. E. A. Starke, chief geologist of the Standard Oil Company of California. The chemists visited the Lakeview gusher "ruins", ate at the Standard and Honolulu camps in Midway, saw the practical drilling methods in use in the California fields, and departed at nightfall for San Francisco. The trip was informative and enjoyable and will be described for "Derrick" readers in an early issue by Prof. O'Neill, of the University of California, in a paper he is now preparing.



News from this District is
Written Especially for the
CALIFORNIA DERRICK

By **EDWARD MORRIS**
of Santa Maria, California

Union Oil Company Strikes Bonanza

Union Oil Company brought in Newlove 21 on September 19 with an output of 2000 barrels daily and from this initial production it has settled down to a consistent production rate of 1600 barrels. This well was originally drilled in to 2820 feet but did not pay so was shut down for two years. Later when one string of tools was idle the company sent the crew over to No. 21 to deepen it with the result that at a depth of 3150 feet this remarkable well was brought in. The oil is 29 gravity, and comes from a splendid appearing sand. Its success with No. 21 has inspired the company to make additional effort along the long line of the Newlove tract and No. 22 will be deepened and two wells drilled in that vicinity. A new rig has already been built.

Santa Maria Oil Fields, Ltd.

Santa Maria Oil Fields, Ltd., has fallen off somewhat in production during the past month, owing to the sanding up of the Los Alamos well on several occasions. The air compressor which proved so successful in starting the flow in this well has been discontinued and it is probable that light oil will again be circulated to stimulate the flow. The company has obtained a market with the California Liquid Asphalt Company for the low gravity oil of this well and is now making shipments. No. 2 and No. 6 near the Palmer show little change, each producing about 200 barrels. No. 7 will be completed within a short time.

Palmer Oil Company

Palmer Oil Company has gradually decreased its activity on the Blochman tract and from the present indications is going to concentrate its efforts on restoring the old wells to action. No. 1 has shown some favorable signs of opening up and No. 2 is producing a small quantity of heavy oil, the production being given by the company as 220 barrels per day. There is considerable gas in the well and the company hopes to bring it back to a good producer again. The best well on the property is No. 4 which is consistent at around 500 barrels daily. On the Stendel tract the company is about to complete No. 8 and will have an excellent opportunity of testing out that area.

Pinal-Dome Oil Company

Pinal-Dome Oil Company, which recently completed the amalgamation of the two companies, reports a steady production from its well on the Wickenden tract. This well has proven a big surprise in that since coming in it has shown no dropping off and is producing a fair fuel oil. In the main field the company is deepening one of its small producers and hopes to emulate the Union by getting the second sand.

New Pennsylvania Company

New Pennsylvania Petroleum Company will complete its No. 7 within 15 days. This well is only a short distance from the big well brought in by the Union and will undoubtedly be another flowing well along that line of the property. In addition the company is planning another well to be drilled between No. 7 and Newlove 21 and as it has three ideal sites for wells within the close proximity of this highly productive strip, other wells will be put down in rapid succession. The production from the old wells is holding up remarkably and with an addition of No. 7 its income to the stockholders will be increased.

Brooks Oil Company

Brooks Oil Company has done no new work on its property in Cat Canyon and has centered operations on No. 2 in an effort to stimulate the output. This has been the most consistent well in Cat Canyon and although has been shut down several times, it is very reliable at about 300 barrels daily. The company has a contract with the asphalt refinery at Hadley and has a ready market for the output.

Rice Ranch Oil Company

Rice Ranch Oil Company in the main field has located a site for its new well close to the New Pennsylvania line and will immediately begin drilling in an effort to get the highly productive strata encountered in the Union Newlove 21 just across the line. This particular territory is looked upon as the most promising area in the field since the advent of the big well and the companies in that vicinity are taking advantage of an early start to get into the oil sand.

Merchants Oil Company

Merchants Oil Company has resumed work on its well south of Cat Canyon. The hole was badly damaged at 2600 feet and it will require some time to get the bad pipe out and put the well in condition for further work. The first sands were encountered before the well was originally shut down and it is probable that this encouragement will help the newly organized company to get through the difficulty.

Bradley Canyon Oil Company

Bradley Canyon Oil Company has its well down 1650 feet with 8-inch casing. Only a 10-foot stratum of oil was encountered at 1340 feet but this showing was sufficient to indicate that the territory is very shallow and that the possibility of getting a substantial production is good.

Santa Maria Midway Oil Company

Santa Maria Midway in the Tepusquet is drilling its well at 3650 feet in an effort to get down into the sand. This well has taken on the appearance of a deep-hole test, although several promising strata were encountered at a shallow depth.

Summit Oil Company

Summit Oil Company, on the northern edge of the eastern field, is down 3020 feet with 6-inch casing. The hole is in good condition and from all indications will be ready for a test within a short time. Several good sands have been passed through to date.

Purissima Hills Oil Company

Purissima Hills Oil Company, east of Lompoc, is drilling with 4 1-2-inch casing at 3650 feet. This well has met with several serious accidents but is again making new hole and from all indications has gotten by the trouble it had with the 6-inch pipe above this point. The company is prospecting new territory.

Los Flores Land and Oil Company

Los Flores Land and Oil Company has abandoned its project lying between the main field and the southern end of the Cat Canyon district. Nearly \$250,000 has been spent in developing the property, without results. Only one well has been put down deep enough to be termed a test and that was a dry hole. Other wells met with mechanical difficulties and among the many troubles which developed the finances finally gave out and the management has been at the limit of its power to keep the project alive as long as it has. The company owns nearly 2000 acres, a portion of which is unquestionably oil-bearing.

Patents Recently Granted

The following recently granted patents of interest to the oil trade are reported expressly for the California Derrick by Joseph M. Nesbitt, Patent Attorney, Park Building, Pittsburgh, Pa., from who printed copies may be procured for 15 cents each:

Packer for oil or artesian wells, R. C. Baker, Coalinga, Cal., 1,037,850.

Gas well packer, L. P. Boee and Ray Davis, Chanute, Kans., 1,038,808.

Underreamer, also shut off head for casings and the like (2) Warren Wagner, Petrolia, Tex., 1,038,243 and 1,038,244.

Sand well casing and apparatus for sinking the same, A. P. Schnyder, Poag, Ill., 1,039,973.

Expanding sleeve for standing valves, Daniel Daniels and L. P. Burgess, Los Angeles, Cal., 1,039,496.

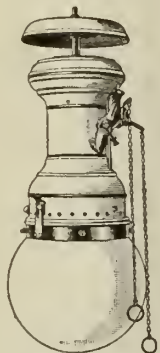
Well mechanism, M. E. Layne, Houston, Tex., Reissue No. 13,467.

Perforation cleaner for oil well pipes, J. W. Batt, Mari-copa, Cal., 1,040,118.

Well casing machine, E. J. Pennypacker, Los Angeles, Cal., assignor to Baker Iron Works, same place 1,040,252.

Union Makes Midway Purchase

The Union has taken over 160 of the 320 acres held under option from the Hale-McLeod company on section 34-31-23. It is understood that the consideration was \$200, which is now an extremely low price for land in this portion of the Midway district. However, the Union obtained its option several years ago, before the field had come into prominence. The Hale-McLeod Oil company has also profited by the deal, as the holding was government land upon which a claim was filed.



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Electric Power in Oil Field Work

(By L. W. Sharp, Editor of the "Midway Driller.")

An article of great interest to oil operators who have in mind economy and progress, appeared in an October number of the Midway Driller, the very reliable newspaper published at Taft, in the heart of the West Side Fields. The article began with the statement that the use of electricity for pumping and drilling purposes on oil field properties had been noted in the columns of the "Driller" from time to time during the past year, and that these occasional items, when taken collectively served to show what a large amount of work is now being done by electrical energy in the West Side Fields. In the August number of the Derrick we gave a brief but very significant item relative to the number of motors sold by the Westinghouse Company and others to operators the last year. The following facts from the "Driller" corroborate statements made by us in the article referred to, all of which we knew to be facts before giving them to our readers. The "Driller's" article follows:

Most of the users of electric power apply it for pumping, though its use for drilling purposes has proved successful and economical, and the number of drilling rigs equipped with it is constantly being added to. At present its use in drilling is confined to standard tools, though two of the largest electrical manufacturers are experimenting with electrically-driven rotaries, and a practical test is to be made in the near future.

Among the companies of the west side fields that are using motors for pumping, pulling and cleaning out are the following, the figures showing the number of motors used:

Millie Francis 2, 5 more ordered; Carbo 2, Traders 8, Indian & Colonial Development Co. 15, Traffic 3, Hale-McLeod 7, Dome 7, Hondo 5, Dominion 3, Bankline 12, K. T. O. on section 15-31-22, 1; M. H. & M. 1, Midway Peerless 1, Midway Pacific 1, Reward 5, Kern River Oil Co. 2, General Petroleum 50 on its different divisions, including 4 in Belridge and 5 in Lost Hills, 75 more ordered; Santa Fe 68, and 135 more ordered.

Companies drilling with motors are: General Petroleum 2, Santa Fe 1, Midway Pacific 1, Cherokee 1, K. T. O. on 15-31-22, 1. The Rico Oil Co. operates its dehydrating plants with two motors.

The Midway Fields is running its sump and line pumps with motors. Each day 4000 barrels are being pumped from the sump. This is the only electricity at present used in the Sunset field, though several other properties will probably be using it by the first of next month. (November.)

In an interview with Manager J. B. Carter of the light and power company, he stated that the increasing use of electricity is due to important reasons: It is far cheaper than steam or gas engine power, and is more reliable than gas engines. He referred to a carefully kept record of one of the largest operators, which showed that during July sixty-two wells, of an average depth of 1528 feet, were pumped with electricity. The average daily production was 103 barrels. The average power consumed per well per day was 68.5 kilowatts, which at the field rate of 1 1-2 cents, made the average pumping cost per well per day \$1.03. Figuring this against other powers, with

overhead, help, etc., it equals a saving of seventy-five per cent.

Some drillers and pump men have a prejudice against electrical power. In using steam and gas the engine slows, by slowing down, when the pull is heavier than it should be. This is not true with an electric motor, but in case of trouble the power "kicks out" by a voltage release. Should the rod part, the motor runs at about the same speed as under load.

An appliance, known as an ammeter, tells exactly the amount of power that is being used. It fastens to the headache post and being always in sight, prevents a rig being pulled in or other damage done. The workmen who have used motor power, said Mr. Carter, prefer it to the others. That the operators also do is evidenced by the number who have had electricity installed. The fact is the motor demand has been so heavy that the stock of two manufacturers is about exhausted. The field motor is especially built for the work and is built to stand hard usage, such as a sudden reversal, while at high speed.

The company's sub-station on the south side, has a capacity of 3000 horsepower. The voltage from both the North Fork and the Bakersfield plants comes into this station, where the two are synchronized and brought together. The current from each line is received at a voltage of 60,000 and is reduced by transformers to 10,000. Should an accident happen to either plant or line, the other carries the load, which assures a practically continuous circuit. A sub-station at McKittrick can develop half the efficiency of the Taft station, or 1500 horsepower. The power line runs to both sub-stations, and the continuity of current is controlled by switches.

The San Joaquin company is extending its power and light line to the coast, via Coalinga. The construction work is well under way. Coast towns will be served with domestic and commercial light and power, and the Santa Maria oil fields will also be served.

The main power plants of the company are at North Fork in the mountains of Madera county, where several millions have been spent in reservoirs and power stations. Practically the whole San Joaquin valley is covered by the company's lines. Every kind of demand for power and light is satisfied, including the Fresno and Bakersfield street car lines. Throughout the agricultural sections the power is largely used for irrigation pumping.

Space Saved in U. S. Battleships

The space saved in the length of the U. S. Battleships Nevada and Oklahoma by the use of oil as fuel instead of coal, is 62 feet—almost one-half the space necessary if coal were used, when the space would be 128 feet! Not only this: fire-room weights have been decreased some 300 tons, the fire-room force is decreased by about 50 per cent, and there is a decrease in the fuel weight for a given steaming radius, as compared with coal. The Oklahoma and Nevada are oil burners exclusively.

The Advance of the Oil Engine of Diesel Type

A Page of Valuable Facts Gleaned from the Technical Press of the World

In a recent editorial dealing with the possibility of the oil engine, the following appeared in the Scientific American: "Oil is the coming fuel for propelling vessels. * * *"

Roughly speaking, in oil engines one ton of oil equals 3 1-2 tons of coal, the economy being higher as the size of the engine is increased. In order to compete with oil, coal must be obtained at thirty-nine cents per ton!"

(Coal at thirty-nine cents per ton; who can imagine it? It

is out of the question; there can be no competition between coal and oil under these circumstances. How many oil operators know what a Diesel Oil Engine it? While the "Derrick" has been running articles on the Diesel Type Engine for a long time past, every day notes some new use for this oil engine, some improvement, or some proof of superiority for this type of power creator. That is the reason the following facts have been gathered from various reliable sources and are given in the "Derrick."—Editor.

The Selandia's 21,000-Mile Trip

At the conclusion of the first round trip of the Diesel-engined liner Selandia, from Copenhagen, Denmark, to the Orient, a total distance of 21,840 miles, an inspection was made of the big engines, a fine report of which was given in the "Derrick" early in the present year, and it was found that they were in a most satisfactory condition, indeed. Not a mechanical defect had developed. The piston rings and cylinders were found clean as could be, and the engineers spoke the highest praises of the performance of their engines during the entire trip. The consumption of fuel oil was but nine tons per day of 24 hours, while the cargo carried was 9,300 tons. The economy of the new engine will be appreciated when it is known that for this nearly 400 foot vessel, but ten men and three boys were required in the engine room.

Diesel Engines for Electric Power on Cars and Boats

Two highly interesting developments of recent date are given in technical news journal dispatches stating that the Swedish State Railroad is "running a new combined Diesel engine and electric car" carrying forty passengers. The railroad first tried out a benzol motor to work a dynamo so as to give current for the motors of the car, but the benzol motor was not up to the task required of it and was rejected, being supplanted by the Diesel now in use. A speed of 46 miles an hour is made on this car, which runs over a section of track 25 miles in length. The fuel consumption is given as 22 pounds of oil against one-half to one ton of coal for a locomotive, while less water is used. Thus is economy secured in a number of ways.

The "electric boat" is now in process of construction, for use by the Montreal Transportation Company. A 300 h. p. Diesel engine coupled to an alternating current generator, will supply the power, which will drive the propeller shaft at a speed of approximately 80 r. p. m. (revolutions per minute.) The whole will be under control of the pilot on the bridge of the vessel, where switches directly controlling the motors will be mounted.

British Navy's Oil Status

It is given out in certain responsible quarters that the British Admiralty is "speeding up" the adoption of oil fuel in the British Navy. One of the recent developments is the letting of a contract for an oil tanker of approximately 9000 tons dead weight, 430 feet in length, to be fitted with two-stroke Diesel engines; contracts have also been let for two smaller tankers of 1000 tons capacity each. The British Admiralty is at present possessed of a tank steamer called the "Petroleum" from which they have accomplished the remarkable feat of taking oil into a super-dreadnaught while the latter was towing the tanker "Petroleum" at 600 feet distance at a speed of 19 knots, or about 21 3-8 miles per hour—full speed. This accomplishment marks in reality a definite era of achievement in fueling warships. It is possible through the use of a flexible metal hose of 5-inch diameter, the metal being bronze, wound spirally upon itself, having the advantage of being strong, incorrodable, and making no leakage. The oil can be pumped through this hose at the speed given, at the rate of 80 tons per hour. The last cargo of fuel oil taken on the "Petroleum" was loaded at Port Arthur, Texas, on September 17, and consisted of 6500 tons purchased from the Gulf Refg. Co.

New Warships to Have Diesels for Lighting Purposes

Diesel motors up to 100 h. p. are to be "almost exclusively employed" to generate the electric lighting power on new British warships. It is reported that several storage stations on the east coast of Scotland are shortly to be erected to ac-

commodate navy oil. That oil would be exclusively adopted by the British Admiralty as the fuel for the British navy (either directly or in Diesels) is the consensus of opinion of the leading British papers, "if the supply were beyond question. The question of supply and demand is, of course, the essence of the whole matter"—these quoted remarks being taken from a recent discussion of the matter in one of the foremost English journals. It will be of interest to our readers to know that a Royal Commission to investigate and report on the supply of oil fuel for the British navy has been approved by King George.

Gasoline Prices and Motors

Per written report of the United States consul at La Guaira, Venezuela, gasoline is selling in that South American city for 65c per gallon and the supply is not equal to the demand even at that price. The passenger steamers calling at LaGuaira do not carry the product, through fear of explosion, and the supply is dependent on the arrival of sailing vessels, which come with gasoline as one of many other commodities as a cargo. Here is the clearest kind of instance as to what supply and demand do to prices. At the present time there is a nation-wide howl at the price of gasoline, which is now 60 per cent higher than last winter. The howl is not justified: the increasing demand and practically unenlarged supply are responsible. The truth of the matter is that should the consumption of gasoline increase in the same ratio as during the last several years, and should no new refining oils, carrying a good percentage of gasoline, be discovered, so that the supply continues stationary, the prices will continue to advance. However, it has been proposed for a long time past, and great motor houses are now working on the question, that a motor be built suitable for automobiles and other motor vehicles now using gasoline, which will be adapted to the use of other oils than gasoline—for instance, kerosine. The working out of this problem lies with inventors and manufacturers; and the Diesel motor's principle being no secret, it should be no great length of time before the adaptation of the engines to the more plentiful grades of distillates has become an accomplished fact.

British Diesel-Engined Vessel

The British Diesel-Engined vessel "Evestone," length 276 feet, breadth 40 feet, 6 inches, displacement 4,400 tons dead-weight, capacity 3600 tons, which was recently completed and made its trial trip, has been accorded a great deal of attention of late. The engines develop 850 brake h. p., working on the two-cycle principle, and make 115 r. p. m. The engines can be changed from full speed ahead to full speed astern in eight seconds. The extra space available for cargo on a thirty-days trip, as compared with a sister ship driven by steam engines, will accommodate 400 tons.

Gasoline Fire Extinguisher

English chemists have recently perfected a foam manufacturing process which makes a foam that extinguishes gasoline flames with extraordinary rapidity. In tests recently made before the British Fire Prevention Committee, at which members of many government departments were present, including representatives of the military aviation department, the foam was put to severe tests but extinguished the flames in every instance.

Standard's New Tanker

The Standard recently launched its new oil steamer El Segundo, which will ply between the Richmond refinery and El Segundo. The company is now making shipments from its new wharf at the El Segundo refinery.

California Production for and Field Operations During September, 1912

When the August statistics came to hand, so did joy; this due to the big gain in consumption. The joy will not be quite as general with the dissemination of the facts of the production, consumption and surplus statistics for the month of September. Suffice it to say that the daily average surplus in August had declined to 12,266 barrels, while the September statistics chronicle a rise in daily average surplus to 30,266 barrels, a clear gain of 18,000 barrels per day. While as for total storage on hand, it now amounts to 46,068,068 barrels; or rather, that was the storage on September 30th. An "overestimation of stocks by producers," totalling 242,605 barrels softens, so to speak, the blow on the head of the stricken; that is to say, there is not as much oil in storage as there would have been with the increased daily over-production, if the 242,605 barrels of oil supposedly in storage, actually was there. It wasn't.

Consumption declined temporarily. The daily average decline totalled 13,499 barrels. Production increased in the daily average by 4501 barrels. The net daily gain added to storage was, therefore 18,000 barrels; this, added to the August surplus of 12,266 brings the daily addition to stocks up to 30,266 barrels of oil. The total production of oil in California in September amounted to 7,581,285 barrels; not so large in bulk as the August figure, but actually 4501 barrels per day larger

for the month. The month being one day shorter than August makes the apparent discrepancy plain. The total consumption during September was 6,673,301 barrels, a gain over the Sept., 1911, consumption of more than a third of a million barrels, to be exact, 333,893 barrels. Hence while September's consumption was smaller than that of August, nevertheless when compared with the corresponding month for last year, a great increase is apparent, and this in an apparently "off" month.

In the matter of field operations the comparisons are: Rigs completed in August, 70; in September, 59; fewer completions in September, 11; wells drilling in August, 412; in September, 397; fewer number wells drilling in September, 15; total wells producing in August, 5556; September, 5589; gain producing wells in September, 33; total wells completed August, 82; wells pleted in September, 26; (note, some of the new wells either were not producers to begin with or else have not been put on production); wells abandoned August, 8; September, 1; decrease wells abandoned, 7.

Daily average production in August totalled 248,208 barrels; in September, 252,09 barrels; gain in September, 4501 barrels. Daily average consumption in August, 235,942 barrels; in September 222,443 barrels; daily average surplus, 30,266. Lost Hills, Midway and Fullerton fields all made large gains in output. Perusal of our regular report which we append, gives all the changes in detail:

County	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Prod. for Month
Kern River .....Kern	7	7	1655	4		992,640
McKittrick .....Kern	6	13	212	5		533,671
Midway .....Kern	23	130	705	19	1	2,249,451
Sunset .....Kern	3	23	250	6		512,520
Coalinga .....Fresno	10	65	876	10		1,593,674
Watsonville .....Santa Clara		1	5			3,600
Arroyo Grande .....San Luis Obispo		1				
Lompoe .....Santa Barbara	1	2	23	1		93,000
Santa Maria .....Santa Barbara	3	24	157	1		459,000
Summerland .....Santa Barbara		1	122			5,400
Santa Paula .....Ventura	2	24	303	2		64,036
Newhall .....Los Angeles		1	78			9,568
Salt Lake .....Los Angeles		15	289			191,893
Los Angeles .....Los Angeles			401			32,870
Whittier-Coyote .....Los Angeles		16	139			85,773
Puente .....Los Angeles		1	56			2,400
Fullerton-Brea Canon .....Orange	1	53	276	4		625,604
Lost Hills .....Kern	3	19	42	4		126,185
Salinas Valley .....San Benito and Monterey		1				
Repetto .....Los Angeles		1				
	59	397	5589	56	1	7,581,285

Summary

	Barrels
Stocks, August 31, 1912.....	45,402,689
Less Overestimation	242,605
	45,160,084
Production, September, 1912..	7,581,285
	52,741,369
Consumption, Sept. 1912.....	6,673,301
	46,068,068
Stocks, Sept. 30, 1912.....	46,068,068
Daily Ave. Production.....	252,709
Daily Ave. Consumption	222,443
Daily Ave. Surplus	30,266

Companies Completing Wells in September

Kern Trading and Oil Co. in Kern River, 4; Sunset, 1; Coalinga, 3; total, 8. General Petroleum Company: Belridge, 1; Midway, 4; Sunset, 1; Lost Hills, 1; total 7. Standard Oil Co.: Midway, 3; Coalinga, 2; total, 5. Belridge Oil Co., 3. Pittsburgh-Belridge, 2. North American Oil Co., 2. Cal. Oil Fields, Ltd., 2. Montebello Oil Co., 2. Devils Den Consolidated, 2. The following companies and individuals brought in one well each in September: J. D. Spreckles, Muscatine Oil Co., M. J. and M. & M. Cons. Oil Co., M. & T. Oil Co., Commercial Pet. Co., Berkeley Coalinga and Spokane—Coalinga Oil Co.'s: Orentt Oil Co., Western Union Oil Co., The Petroleum Co., Amalgamated Oil Co., Pet. Development Co., Columbia Oil Prod. Co., Universal Oil Co. Total all companies, 56.

Agency Sales for September

During September the total sales of oil made by the Independent Producers Agency were 1,250,000 barrels, only 50,000 barrels less than were sold in August. The price received by the producers was 34 cents per barrel, which was the same as was received the previous month. The affairs of the Agency are now in better shape than they have been for two years. The

production and deliveries just about balance, and the members are relieved of storing part of their production which heretofore has exacted heavy tolls from them. The Agency has a surplus of approximately 13,000,000 barrels, which will be held in reserve and added to if necessary. The action of the Standard in refusing to buy any more heavy oil and the further announcement that on December 1, the big company will go out of the fuel oil business has been received with pleasure by producers of fuel oil here, and especially members of the Agency which deals exclusively in fuel oil. It is possible that eventually the oil business in California will be divided between the two big marketing concerns—the Standard and the Union-Agency the Standard having light oil and the latter concern taking the heavy oil. These developments all look good to the Agency members, and they see nothing but good times ahead for their organization.—L. A. correspondent of "Reporter."

Mexican Oil Exports to U. S.

The declared exports from Tampico to the United States during the quarter ended September 30, totalled \$1,198,597, of which crude oil constituted \$1,125,148. The declared exports during the same quarter last year aggregated only \$175,648.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

UNFORTUNATE SEQUENCE OF DISAPPOINTMENTS

Owing to an unfortunate sequence of disappointments to the "Derrick's" management, we are forced to go to press without a number of features which we usually carry and which we know will be missed. We greatly regret this, needless to say, but we ask our readers to consider the following facts:

Our Santa Maria correspondent, Mr. Edward Morris, whose accurate and valuable data was widely commented on, and incidentally widely copied, found that his business interests called him to a new locality. Mr. Guy H. Salisbury was suddenly called to New York. Mr. Paul W. Prutzman received a hurry call of great importance and left without finishing an article on the gravity of Coalinga oils, so that we are unable to run it in its present shape. Lastly, Professor Edmund O'Neil, whose article will appear in the next issue, was delayed in writing the article, which we had scheduled for this number. Under the circumstances there was nothing left for us to do but to lock up the forms. The "Derrick" was forced, we might add, to do some liberal clipping from our excellent contemporary the "Midway Driller" of Taft, California, whom we hereby thank.

* * * * *

THE EXHIBITION IN 1915

The California Derrick hopes and fully expects to see in 1915, at the Panama Pacific International Exposition in San Francisco, the greatest exhibition of petroleum and its products, and the industries dependent upon the Oil Industry, that has ever been conceived or displayed.

CALIFORNIA is the Petroleum Center of the World. It is the greatest oil producing country of the world. It produced sixty-three per cent of the total output of the United States last year and its output for the present year will be even greater. It is the greatest fuel oil region of the world; indeed, the fuel oil industry started here. Two of the greatest refineries of the world are located in California, one on San Francisco Bay, the other at El Segundo, near Manhattan, Los Angeles County. The trade of California extends to the farthest limits of the vast Pacific and when the Panama Canal is opened California oil will in all probability supply the power for ships plying from Seattle and Vancouver on the North Pacific Coast to European ports, while beyond any question regular passenger steamship service from New York to San Francisco and other Pacific Coast points will be inaugurated within a very short date after the opening of the canal. These vessels will be oil burners. In but a few years they probably will all be propelled by Diesel engines. At any rate, freighters propelled by Diesels will run direct from Europe to the Orient, taking on their oil supply at Los Angeles Harbor, and Mexican harbors, either at Tampico on the east or at the western terminals of the pipe lines across the Isthmus of Tehuantepec. The great era of oil has not yet arrived, although it is close upon us. Wherefore, now is the opportunity to display what the oil industry of California means to not only our country but to the entire globe.

Think of the machinery propelled today by the products of oil!

The opportunity to interest the world in the many phases of the oil business, at the coming exposition, is unexampled.

The oil industry has grown by leaps and bounds until today it overshadows every other industry in California. Upon it are dependent to an almost unrealizable extent the manufacturing industries of this state; but not of this state alone—the whole Pacific slope owes to the California Oil Industry more than is generally known or believed. For this reason, the development of the oil industry of the Pacific Coast, the most wonderful and rapid development known in the history of the oil industry of the world, should be given proper space for a thorough exhibit in 1915. Some gentleman especially fitted for the organization of an exhibit of the allied oil trades should be selected early, should be given every aid by the great concerns of this state as well as the smaller operators, and a combined sentiment should be awakened among producers, refiners, motor manufacturers, in short, all those whose industries are dependent on the oil industry, to the end that the best exhibition ever attempted can be made a reality. The strides of the oil industry during the last few years make an unparalleled opportunity for a magnificent educational display.

The California Derrick is ready to do its utmost to promote this exhibition.

* * * * *

THE FIRST THREE-QUARTERS OF 1912

Now that the September figures are in we are able not only to forecast somewhat accurately what the production for 1912 will aggregate, but to give a quick review of what has occurred during the first three quarters of the year as far as production and consumption are concerned, and to give a fair idea of present field conditions as compared with last year.

One thing is certain: This year's production will be several million barrels greater than that for last year. For the first nine months of the present year the total production in all of the fields of the state was 66,538,237 barrels; the consumption for the same time totalled 61,561,293 barrels; the average monthly production for the first-three quarters was 7,393,137 barrels; the average monthly consumption being 6,840,144 barrels of oil. The average daily production for the first nine months was 246,438 barrels; average daily consumption, 228,005 barrels of oil (to within one-fifth of a barrel); the average daily over-production was therefore 18,433 barrels. If these figures are maintained the total production for the year will amount to 88,717,644 barrels; the total consumption will amount to 82,081,728 barrels; the total production over consumption (storage for year) will amount to 6,635,916 barrels; in short, just about one month's consumption. The increase in consumption over the increase in the production has been phenomenal. While production is increasing at a rate that will bring the total output at the termination of 1912 over that of last year to some 4,973,920 barrels, the ratio of this increase is not as great as the ratio of increase in consumption for the same time. (Our figures not U. S. G. S.)

Will the averages for the first nine months be maintained? That is the question. Unless new light oil producers are brought in the average is likely to drop, as far as production is concerned. The reason? Standard's refusal to purchase any more oil under eighteen degrees gravity. This has shut down a number of large producing companies already, among them the Mascot, which with about a half hundred other companies, will probably reduce the production to a point where the monthly consumption is actually in excess of the monthly production. Also, it will stimulate the production of light oil; but will the effects of this stimulation be rapid enough to be felt on the production side of the line this side of 1913? Frankly, we do not think it will, and unless the heavy oil producers make some unexpected arrangement for the sale of their product, it will not figure to a very material degree during the remainder of the year. They cannot sell to the General Petroleum until early in 1913. Deliberations to let them into the Agency will take time; that is, in all probability. Shipping by rail without a definite market is unsatisfactory. Deduction: The majority of the companies affected will not produce oil between now and the end of the year, or will produce only so much oil as lease conditions will force or a limited and unexpected market will afford them. The light oil production will unquestionably increase; the question is, how much?

On the indicated figures for the year, the increase in the production will be about 6 per cent, in consumption about 12 per cent, and, in view of the discontinuance of the heavy oil production refused by the Standard Oil Company, it looks as though the production percentage increase would fall, while that of the consumption would rise. This is a matter entirely

of speculation thus far, but it will be of unquestioned interest to producers of whatsoever grade of oil, because the production and consumption are their prosperity barometers. Of course, there may be a few more gushers in the Midway field, such as the Kern Trading & Oil Company's big Lakeview rival, (it came in at 40,000 barrels per day), which would upset all calculations as to production. There is a possibility of just this thing, for the big companies of the state are all rushing operations, even as most of the smaller producing companies have curtailed as much as possible. The figures for the last month show this: There are 313 drilling wells on which work has been suspended, and these are almost all on the properties of the smaller companies. The indicated gain in production for this year is 4,973,920 barrels over 1911; the indicated consumption gain being almost double for the same period, the figures forecasting a total consumption gain of 8,925,878 barrels.

Exports from San Francisco During Month of September and Comparison with Former Records

The total shipments of crude and various products from San Francisco during September was 18,850,783 gallons valued at \$596,972, bringing the total shipments from this port for the first three-quarters of 1911 to 145,677,647 gallons, valued at \$4,174,493. The shipments of the first three quarters and comparisons of same with corresponding periods during last year, will be discussed after comparing the August and September shipments of this year.

No crude was shipped out of San Francisco either in August or September, and in fact, crude is being displaced by residuum more and more, so that in all likelihood, unless placed on the market by producers whose product is of extremely low gravity and valueless for anything except fuel, so that it can be sold for fuel only and at a price which will have to compete with residuum, crude will in no great length of time disappear from the list of petroleum products exported from San Francisco.

There was an increase in the exports of illuminating during September over August shipments—same jumping from four and a half million gallons in August to almost eleven million gallons in September, with corresponding increase in value. Lubricating and paraffin shipments jumped from 27,000 odd gallons to 46,000 and over, values corresponding likewise. Naptha and gasoline exports doubled, both in quantity and value, while residuum, gas oil and fuel oil showed a slight falling off. August having been one of those months in which an unusual demand was met; it might be added that October will probably show a considerable gain over September in residual exports, if not over those of August, the shipments greatly depending on the arrival, departure, length of trips, etc., of the oil carriers. Following is a table showing the shipments from San Francisco during September in detail:

	Quantity in Gallons	Value
Crude		
Illuminating	10,895,946	\$458,641
Lubricating and Paraffin	46,356	11,089
Napthas, gasoline, etc.	14,493	2,895
Residuum, gasoil, fuel oil, etc	7,893,988	124,347
Totals	18,850,783	596,972

EXPORTS FOR FIRST NINE MONTHS OF 1912

Crude

Exports of Crude from San Francisco, during the first nine months of 1912, were 28,300,497 gallons below the exports during the corresponding period of 1911, and almost identically the same number of gallons below the 1910 exports for the first three-quarters. We have gone into this matter elsewhere: Residuum, suffice it to say, is really superior to crude as fuel, and can be sold cheaper, and is therefore pushing crude out of the market.

Illuminating

The gain in the demand for illuminating, and corresponding exports from this port in the last several years has been nothing short of marvelous, as the figures for the first three-quarters of each will attest: 1910, 27,368,414 gallons, valued at \$1,080,326; 1911, 59,900,607 gallons, valued at \$2,023,472; 1912, 67,609,756 gallons, valued at \$2,902,241. These figures

covering in the briefest possible space the exports of the first nine months of the years 1910, 1911 and 1912, show, in a way, how Standard Oil is building up the trade for illuminating in the Orient and on the Pacific littoral in general.

Lubricating and Paraffin

Never totalling anything tremendous, the exporting of lubricating and paraffin oils from this port for the first nine months of this year has been on a larger scale than heretofore, each similar period for two years being smaller than the succeeding terms. The figures showing these gains follow: Exported from San Francisco first nine months of 1910, 399,173 gallons, valued at \$95,152; 1911, 402,183 gallons, valued at \$91,973; 1912, 476,430 gallons, valued at \$100,134. California has practically no paraffin oils, although our lubricants are of excellent character, though not appreciated as they undoubtedly will come to be later on.

Napthas, Gasoline, Etc.

The general gain in the exportation of napthas, gasoline, etc., from this port is shown by the following figures covering the first nine months of 1910, 1911 and 1912: 1910, 72,422 gallons, valued at \$14,670; 1911, 118,874 gallons, valued at \$21,265; 1912, 127,403 gallons, valued at \$24,968.

Residuum, Gas Oil, Fuel Oil, Etc.

The figures showing the gain in residuum shipments require a second and third glance to convince one that he is not "seeing double." Same follow: First nine months of: 1910, 1,406,173 gallons, valued at \$27,882; 1911, 4,379,704 gallons, valued at \$75,210; 1912, 59,486,333 gallons, valued at \$890,900.

These figures show what residuum is doing to crude oil. They show that residuum will soon have the crude, unless under the conditions already referred to, "backed off the map," of exports from California. The time is close at hand when all fuel oil for ships and steam plants will be merely residual oils.

David White Appointed Chief Geologist of U. S. Geological Survey

A dispatch from Washington dated Nov. 13th, announces the appointment by the Secretary of the Interior of David White as chief geologist of the U. S. Geological Survey to succeed Waldemar Lindgren, who leaves Washington to become Rogers' Professor of Geology and head of the geological department of the Massachusetts Institute of Technology. Mr. White, the new chief geologist, has been connected with the Survey since 1886.

What Gasoline Will Do—Three Miles a Minute

A specially built, 300 horse-power Benz racing car will soon make its appearance in America. The car is said to have been purchased by a well-known race promoter and will probably be driven by Robert Burman, holder of the world's record for straight-away speeding, in an endeavor to lower his own record of 25 seconds for a mile. The car is reported to have made a mile in 21 seconds, or almost three miles a minute.—Scientific American.

Natural Gas Reports for 1911

The U. S. Geological Survey has published Dr. David T. Day's report on the natural gas industry for the year 1911. Same will be discussed in our next issue.

STATEMENT OF OWNERSHIP

STATEMENT OF THE OWNERSHIP, Management, Circulation, Etc., of California Derrick, published monthly at San Francisco, Cal., required by the Act of August 24, 1912. Editor, Charles Carroll Wright, 788 Mission St., San Francisco, California; Managing Editor, same; Business Manager, same; Publisher, Same; Owner, Charles Carroll Wright, sole owner; Known bondholders mortgagees and other security holders, holding 1 per cent or more of total amount of bonds, or other securities, none.

(Signed) Charles Carroll Wright,
Business Manager.

Sworn and subscribed before me this 14th, day of October, 1912.

(Seal)
CHARLES FRANCÉE,
Notary Public in and for the City and County of San Francisco, State of California. My commission expires January 8th, 1914.

Big Events of Recent Date

EXTRA!

EXTRA!

Union Oil Control Sold to General Petroleum Company

As we go to press we learn that the control of the Union Oil Company of California, has been sold to the General Petroleum Company interests for a price reported at \$20,000,000. The news appears authoritative and authentic. The control of the Union is alleged to have been held by Pres. Lyman Stewart, through his control of Union Provident. Every share of his stock in Union Provident has been purchased by the General Petroleum Company, according to the press dispatches bearing the report. The backers of the General Petroleum in this purchase are not known. Standard Oil, of California, which was generally connected with the deal as backing the General Petroleum Company, has issued an official denial of any connection with the deal under the name of President D. G. Schofield. Capt. John Barneson, of the General Petroleum, General Pipe Line and General Construction companies, is quoted as saying that the backers are independent Englishmen, not connected with the Shell-Royal Dutch combine, nor with the Standard Oil interests, and it has been suggested that interests closely allied with the British government are backing the General Petroleum in its campaign of acquisition and development. The Drexels of Philadelphia are also mentioned. We expect to give full particulars of this sale in our next issue. We have held the press to get this information and are unable to go further into details at this point. The event appears the biggest of ten years history of the California Oil Industry.

Low Grade Producer's Dilemma

A meeting was held in Bakersfield on October 27 at which from fifty to sixty producers connected with twenty-seven of the more than fifty companies producing oil under 18 degrees in gravity, which have been notified by the Standard Oil Company that the latter will no longer purchase their product, were present. They met to discuss a method out of their predicament. As a result of the meeting an organization known as the "Oil Producers Marketing Association" was formed and a committee of five consisting of Timothy Spellacy, C. A. Barlow, Col. T. H. Minor, L. P. Guiberson and H. A. Jastro, was appointed for the purpose of outlining some form of organization and to meet with the Oil Producers' Agency in Bakersfield on October 29, to see if some feasible plan of co-operation could be effected.

The meeting was presided over by C. A. Barlow. Mr. Henry Aeh, of the Monte Cristo Oil Co., and Col. Tim Spellacy, of the Mascot and Creseus Oil Companies, both sought to explain the conditions that had brought on the present state of affairs. The over supply was rightly blamed for the trouble. Col. Spellacy stated that he was in favor of shutting down indefinitely, and that he had already done so. He could see no profit in 30-cent oil. Considerable acrimony developed in discussing the Standard's action.

The meeting of the agency on the twenty-ninth, at which forty-eight of the members were present at the call of the roll, was given over largely to discussing whether or not the companies affected by the Standard's order should, at this late date, be admitted to the agency membership. The sentiment was strictly divided, and the subject went over to the meeting on the ninth inst. The companies forming the "Oil Producers Marketing Association" have a daily production aggregating between 25,000 and 30,000 barrels, which is just about the production of all the agency companies outside of the Union Oil Co., which is an agency member. An offer was made by the General Petroleum Company to purchase 150,000 barrels per month to the amount of 400,000 barrels, at a price to be agreed upon, the General to furnish the storage, this offer to meet with further consideration after the General's pipe line had been completed—about March first. At the Agency meeting on the 29th, the Miocene, United Development and Globe Exploration companies were all admitted to membership in the Agency. Also, the sentiment against drilling new wells was unanimous. The big event that developed was the presenting of a proposition by Mr. Thos. O'Donnel for the American Oilfields Co., ask-

ing the Agency to release them on 210 acres in Sec. 36 in Midway (their best property, it is generally conceded) and allow the company to substitute other land in its place. Also, Mr. O'Donnel expressed a willingness on the part of Mr. Doheny to withdraw his companies from the Agency entirely. This was put to a vote in the form of a motion, which was defeated by a big majority. The Doheny companies have been favored members, getting 50 cents per barrel on a special contract, and their request embittered a number of the members.

At the meeting of the Oil Producers Marketing Association held in Bakersfield on the ninth, seven names were added to the original committee appointed to investigate means to market the oil of those in the association. The present committee consists of the following: H. W. Thomas, Henry Aeh, L. P. Guiberson, R. E. Graham, John McGinn, Leslie Wright, Sam Johnson, George Whitaker, T. H. Minor, C. A. Barlow, H. A. Jastro, and Col. T. A. Spellacy. The committee's work really appears to be to get the various companies composing the association and the Agency together. What the outcome will be is not known.

General Petroleum Purchases Continental Petroleum

The General Petroleum Company has purchased the entire holdings of the Continental Petroleum Company aggregating 7670 acres, scattered in four fields. The properties embraced in the transfer are the Continental Petroleum holdings, 160 acres in the Midway field, 590 acres in Coalinga, 1420 in the Kettleman hills and 5500 acres in Mexico. The latter holdings are considered by far the most important and valuable of the whole.

The Continental property, Midway, is a quarter section on section 14-22-23. On it are three pumping wells, which yield a good production. The land is highly valued. The Coalinga tract is good territory, located on section 2-19-15. The Kettleman hills property is undeveloped and is of unknown value. The larger part of the deal, of course, is that embracing the Mexican land. This is proven territory, the 5500 acres being the cream of a tract of 100,000 acres. The consideration is reported to be \$1,500,000 in bonds and \$2,000,000 in stock of the General Petroleum and a large cash payment.

Considering the development activities of the General Petroleum, it is expected that it will soon increase operations on the properties. The deal was made in New York, those selling to the General Petroleum being W. M. Graham of Coalinga and his associates. The General Petroleum is increasing its activities by leaps and bounds and is today one of the foremost companies in California. Its activity since its formation, has been the marvel of the oil world, and its resources seem limitless. The question "who is behind the General Petroleum besides Messrs. Barneson and De Salla?" is the all absorbing topic of the day. It cannot be answered: but whoever may be the backers, they manifest an extraordinary length of purse and a great confidence not only in their own ability but also in the future of the California oil industry, as well as that of Mexico. The General Petroleum company bids fair at the present rate of expansion, to become not merely one of the leading oil corporations of California, but of the world.

Strike Oil at Semi-Tropic

The "Kruse" well on the N. W. 1-4 of section 11-27-23, Kern county, located about seven miles west of Wasco, in what is known as the "Semi-Tropic" district (at present), is said to have struck a fine light oil at between 800 and 900 feet depth. Those owning the property on which the well is located are given as: Doctor A. H. Liscomb, Bakersfield; Mrs. L. H. Glide, Berkeley; Mrs. A. M. Brown, San Francisco; R. S. Marshall and F. R. Danlap, both of Los Angeles. It is expected that the oil will test away up—35 gravity.

Standard Oil Declares Dividend

The Standard Oil Company of California has declared its first dividend since the dissolution of the Standard of New Jersey, the parent corporation. This is the 16th dividend of S. O. of Cal., the first, however, since 1910, and calls for \$2.50 or 2 1-2 per cent on par. The disbursement to shareholders of record on Dec. 2, will take place Dec. 15.

Interesting Developements of Recent Date in all the Fields

THE "SPELLACY" COMPANIES

Mascot Oil Company

The Standard Oil Company discontinued taking Mascot Oil October 22nd. The property at the present time is shut down, and of course the management cannot say when they will resume deliveries; at least not until they receive a better price for the oil than heretofore.

Topila Petroleum Company

One well is completed on the Topila Petroleum Company's property in Mexico, and the company also has erected there one 37,500 barrel steel tank which is now full of oil. This oil is sold to the Waters-Pierce Company at Tampico. It is between 15 and 16 gravity. It is a flowing well of a capacity of 600 barrels per day or better. It is now shut down waiting the removal of some of the oil from the tank. This well is located on a 2500 acre tract, its western boundary being the Topila River, which affords excellent water transportation to Tampico.

Mexican Premier Oil Company

Referring to the Mexican Premier the well started there some months ago is yet incomplete, contrary to reports sent out from Mexico some time back by unknown parties. The drillers are down between 2200 and 2300 feet and have had several showings of gas and oil. The company's management expects to finish this well in a short time.

Premier Oil Company

The Premier Oil Company, Coalinga, has fifteen wells on its property, twelve of which are producing at the present time. The production is around 15,000 barrels per month, of which the Producers Agency disposes of about 60 per cent, the price obtained for it being 34c per barrel.

(Note:—The above information on the companies in which the well-known Spellacy Brothers are interested, comes directly from them and can be relied upon as authentic.—Editor.)

Kern River Oilfields Report

The third annual report of the Kern River Oilfields of California Ltd., deals with the year ended May 31st, 1912, and shows that the net profit, after charging all administration and office expenses, but before making any provision for depreciation and the cost of redemption of wells and equipment thereof, amounted to approximately \$133,130. English oil share authorities are not very strong in their praises of the company's showing.

The Sunset Road Oil Suit Settled

Immediately after we went to press with our last issue, came the news that the suit of the Mercantile Trust company, of San Francisco, against the Sunset Road Oil Company, in which cross complaints were filed by the Union Oil Company and the Kern Valley Bank, was decided in favor of the plaintiff. The foreclosure asked for was granted. All of the \$1,500,000 of Sunset Road Oil bonds were declared to be valid and of equal rank. The contention of the Union Oil Company that its lease of the Sunset Road Oil Company's property, comprising about 7000 acres of patented land, mineral claims and leaseholds, is prior to the bonds, was denied, as was also the claim of the Kern Valley Bank that the larger portion of the bonds are void for want of consideration. The bank's charge of fraud and conspiracy against W. S. Tevis, H. A. Blodget and C. N. Beal was declared to be barred by the statute of limitations.

Speaking of the settlement of the suit the Midway Driller says: The Kern Valley Bank holds \$459,500 worth of the Sunset Road Oil bonds. It is now in liquidation and depends in part on the proceeds of the bonds to pay the remaining 60 per cent of the money due its depositors. Had the bank's contention that its bonds alone were valid been sustained, the amount received would have made the institution fully solvent.

Great Gusher Goes Quickly

Kern Trading & Oil Company's well No. 39, located about two miles north of Taft, Cal., on section 1, came in an immense well on Oct. 17, flowing at the rate of 40,000 barrels per day to

begin with. The rate of flow gradually has decreased and the production has changed to a practically valueless emulsion so that at present what looked to be a second Lakeview well is out of the running. Had the well come in three years ago it would have been reckoned "the greatest well California ever produced," up to that time. As it is, the well brought disgust to the producers in general, and no one was glad to hear of it excepting only the owners! The well was 2467 feet deep; gravity of product was 24.5 degrees.

West Side Seashore Road

The survey for a road between the west side oil fields and the coast through Ventura county, is rapidly going ahead and will be completed at an early date. Both the Kern county and Ventura county surveyors are working at the present date. It is expected that trips to the coast may be made next summer over the new route.

The Kern County Good Roads Club has started a movement to vote upon a bond issue of \$4,000,000 for good roads in Kern county. The roads proposed for the west side are: Three roads from Bakersfield, one of which to extend to each of Maricopa, Taft and McKittrick, also a road connecting these three towns and extending to Lost Hills and Wasco. Four hundred miles of road, in all, is planned.

LUCEY COMPANY TAKES OVER SOUTHERN WELL WORKS COMPANY

(Full Details from Southern Paper)

The Chattanooga Daily Times, of Chattanooga, Tenn., in its issue of Oct. 16, which we received some days after the issuance of our last number, published the news of the purchase of control of the Southern Well Works Company. The newspaper dispatch giving the information follows in full:

Capt. J. F. Lucey, the head of the J. F. Lucey Company, of California, conducting an oil well supply corporation with a world-wide reputation, has acquired, from the estate of the late James A. Wiggs, the entire holdings of the Southern Well Works Company, of Chattanooga.

"This formal announcement is considered by local financial men and others closely identified with the interests of Chattanooga to be one of the most important that have been made in industrial circles for a long time past.

"Captain Lucey is spending this week in Chattanooga. He has been elected president of the Southern Well Works Company, and is now an active head. Saturday he departs for London, where the J. F. Lucey corporation maintains a general office to look after a part of its extensive European business.

"Other offices of the corporation are maintained in Los Angeles, San Francisco, Chicago, Pittsburg and New York. Branches have been established in other cities throughout this and other countries.

"George D. Lancaster, who made the official announcement of the acquirement by Mr. Lucey of the entire capital stock of the Southern Well Works concern yesterday, did not make public the figures in the transaction. The local industry was acquired by Capt. Lucey after a close investigation of local conditions, the same proving entirely satisfactory to him. He desires to own a plant for the manufacture of a part of the supplies that his concern handles world-wide.

"The Southern Well Works, which was established in Chattanooga by the late Mr. Wiggs, who came here from Beaumont, Texas, is without equal in the south, so far as equipment is concerned. It has installed every equipment for turning out the highest class product in its line. Recent shipments have been made by the concern in Borneo, Mexico, New Zealand, Roumania, Australia and other points throughout the world. It is believed in local industrial circles that Capt. Lucey will later decide to double the capacity of the present plant in order that the increased oil well supply business of the corporation can be cared for. There has been no shut down of the plant since the death of Mr. Wiggs, its founder.

"Capt. Lucey is an ex-army officer and is a comparatively young man. He has made an excellent impression in local banking and industrial circles."

THE STOCK MARKET

Latest Quotations on the San Francisco Stock Exchange

The atmosphere of somnolence which has held continuous sway on the San Francisco Exchange for almost a full year past, with but few nightmares to disturb its dreamy reverie into activity, is still unruffled by any frenzied trading. Not only that, but Associated seems to be the most active trader. Matters have been especially quiet of late, when, because of the impending election (which might disturb oil through the Lord knows what medium, we can't profess to know) and because of the general dullness due to the large production in excess of consumption at this time, buyers have refrained from putting their money into oil shares. Nevertheless, the present is a very propitious time to buy, prices low; lower than they ought to be by far, and lower than they will be a year hence.

Practically the same prices rule on the Exchange in San Francisco as last month. Associated has been selling around \$45.00 and even above \$46.00, fluctuating daily. New Pennsylvania has sold down a little since last month, though why, is a question. New Pennsylvania was quoted at 50c bid on Nov. 11; nothing offered at that price. United Oil has been selling around 35c. Pacific Crude around 50c and 60c. Fifty shares of West Coast Pfd. changed hands October 26 at \$75 per share. Sauer Dough commands \$1.50. As we go to press the market for Associated is quoted at \$45.37 1/2 asked, \$47.25 bid. Caribon is bid 90c, asked \$1.25; Claremont, 60c bid, asked 65c. However, the latest prices are given in the following quotation list:

COMPANY	BID	ASKED
Associated Oil Stock	45 37 1/2	
Caribon	90	1 25
Claremont	60	65
Coalinga Central	20	
Coalinga Mohawk	75	1 00
De Luxe	70	
Empire	75	
Home		35
Illinois Crude		20
Maricopa	29	
McKittrick	09	
Midway Premier		25
Monte Cristo		1 25
New Penn. Petroleum	50	
Pacific Crude Oil		55
Paraffine	25	
Palmer	20	23
Republic	26	
Sauer Dough	1 55	
Silver Tip	50	
S. W. & B.	18	
Sterling	1 10	
Turner	89	
United Oil	35	35
West Coast (pref.)	76 00	
W. K. Oil Co.	1 85	2 00

Los Angeles Quotations and Stock

The Los Angeles Exchange was considerably more active in the transferring of shares in October than in the previous month, as shown by the official report. The number of oil shares transferred was 298,382, their value aggregating \$435,598.09. For the first twelve days in November, considering the holidays, (election day and the day of adjournment due to the death of the vice-president of our country) and Sundays, the trading has been fair. The list of stocks traded in on the Los Angeles Exchange during October shows that a large percentage of the more conservative companies of the state, with only a few of the speculative, are receiving the attention of traders. They include Amalgamated American Petroleum (common and preferred), Associated, Cal. Midway, Central, Columbia, Jade, Mexican Petroleum (common and preferred), National Pacific, New Pennsylvania Petroleum, Olinda Land (Oil), Rice Ranch, Traders Oil, Union, Union Provident, United Petroleum, United Oil Companies. Comparison of the list of companies traded in and those paying dividends in October will show a fair duplication of names, which is the basic reason for their activity at this time.

Following is a list of the latest quotations, showing prices

bid and asked on stocks meeting inquiry on the Los Angeles Exchange:

COMPANY	BID	ASKED
Amalgamated Oil	81 00	
American Crude Oil Co.		30
American Pet. Co. (pfd.)	70	75 00
Associated Oil	15 00	46 00
Bear Creek Oil & M. Co.	50	
Calif. Midway Oil Co.	13 1/2	15 1/2
Central	1 00	1 20
Columbia	1 1/2	1 30
Continental Oil		25
Enos Oil Co.	04 1/2	10
Euclid Oil Co.	29	35
Fullerton Oil	2 55	4 75
Globe		06
Jade Oil Co.	06 1/2	
Maseot Oil Co.		75
Mexican Pet. Ltd. "Pfd."	99 50	101 05
National Pacific Oil Co.	03 1/8	
New Pennsylvania Pet. Co.	50	
Olinda Land Co. (Oil)	38	42
Palmer Oil Co.		45
Penn. Midway Oil Co.	07 1/2	
Pirn Oil & L. Co.	22	
Rice Ranch Oil Co.	1 05 1/2	
Trader's Oil Co.	68 00	70 00
Union	99 00	100 00
Union Provident Co.	99 12 1/2	100 00
United Petroleum	98 00	99 00
United Oil Co.	33	36 1/2
West Coast Oil Pfd.	60 00	
Western Union	70 00	100 00
White Star Oil Co.	10	

Dividends for October

The dividends paid by all California and California owned and controlled companies as far as known, for the month of October, aggregated \$748,113.28. The California companies paid \$65,349.50 more in October than in September. The feature of the dividend declarations was the extra payment by the Fullerton Oil Company, doubling its quarterly disbursement, making a total distribution for the company of \$60,000. The Pacific Crude Oil Co. made another \$60,000 payment to shareholders. The quarterly payment of the Olinda Land Co. swelled the total \$15,000. Union made the regular \$184,743.60 distribution. Mexican Petroleum, Pfd., which is owned by Californians, made its regular \$80,000 disbursement, and this, added to the California companies' dividends, brought the total just inside three-fourths of a \$1,000,000 distribution. Following is the list:

COMPANY	AMOUNT
Amalgamated	\$50,000.00
American Pet. pfd.	8,755.00
do common	39,607.00
Caribon	8,070.30
Central	7,500.00
Claremont	5,000.00
Columbia	9,992.26
Fullerton	60,000.00
Home	5,000.00
Monte Cristo	12,500.00
Mount Diablo	7,500.00
New Pennsylvania	5,000.00
Olinda Land	15,000.00
Pacific Crude	60,000.00
Paraffine	3,000.00
Record	5,000.00
Rice Ranch	4,500.00
S. P. & McKittrick	5,000.00
Sauer Dough	2,992.50
Section Twenty-Five	20,000.00
State Consolidated	5,000.00
Traders'	9,000.00
Union Oil	184,743.60
Union Provident	91,402.02
United Petroleum	48,450.60

W. K.	10,000.00
Western Union	5,000.00
Total Cal. companies	\$668,113.28
Mexican Pet. pfd	80,000.00
Total all companies	\$748,113.28

Panama Storage Tanks

Contracts for four steel storage tanks, each 93 feet in diameter and 3 feet high, to be used for storing fuel oil, have been awarded an eastern firm. The tanks are for use in Panama and were ordered by the U. S. Panama Commission. The U. S. Navy Department has received four large tanks at Guantanamo, Cuba, fuel storage for the navy.

Battleship New York Launched

The new United States battleship New York, launched in New York on October 30th, which will carry ten fourteen-inch and twenty-one five-inch guns, will be the most powerful battleship in the navy, if not in all the navies of the world. The 14-inch guns are fifty-four feet long and discharge shells of 1400 lbs. weight. The New York will have space for 2850 tons of coal and 380 tons of oil fuel, which, in heating power is equivalent to about 950 tons of coal, or one-third the present coal-carrying tonnage. The New York will probably be the most terrible engine of destruction ever built in the interests of keeping peace.

Excellent Working

Puente Oil Co., in Puente Hills, is making 450 gallons of gasoline daily from the gas being taken from their oil-and-gas wells, some of which are 30 years old, the gas being a very heavily saturated product indeed, from which, according to fairly reliable advices, as much as 4 1-2 gallons per 1000 feet of gas is extracted.

NOTES

The old Lakeview Gusher hole is now cleaned out to within several hundred feet of the depth at which it was originally brought in—2300 feet. More "over-production" soon?

The Petroleum Company, Gilman ranch, La Habra Valley, is delivering 1300 barrels daily from two wells to the Standard Oil Company.

The Midway Gas Company has named the rate it intends to charge the citizens of Los Angeles for natural gas when the company begins distributing it. The rate will be 60 cents per 1000 feet for domestic purposes. For manufacturing purposes no flat rate is made, the price to be regulated according to the amount used. The present price of artificial gas in Los Angeles is 80 cents per thousand.

The California Miners' Association, which will meet in San Francisco December 9, with delegates from every state in which petroleum, gold, silver and copper are produced, is to make a strong attempt to modify the present conservation laws of the mineral bearing states. A representative of the Department of the Interior will be present to participate in the discussions to be held. Conservation as now practiced, will be the all-absorbing topic of the convention. Among subjects to be debated are: The right of the prospectors to enter forest reserves for mineral exploitation; the right of power companies to cross the for-

est reserves with pipe lines; the policy of the government on the withdrawal of oil lands.

Seaboard Oil & Transit Co.

Under date of Nov. 13, the Oil World publishes the following on Seaboard Oil & Transit: The Seaboard Oil & Transit's stockholders have so far taken up 600 of the \$100 bonds issued by the company. Coming right after assessment this is considered quite satisfactory. The authorized issue is \$2,500,000, but only \$1,000,000 is to be issued at this time. Stockholders may purchase at 90 in proportion to their number of shares, and those desiring may take over the rights of others who do not subscribe. The company intends to place the balance itself among the public and aims to get par value. The "Derrick" has no recent advices from the company excepting that a well on the Gate City property has been deepened with good results and that jacks are being installed to operate the eleven wells in the Templor Ranch property.

New Asphalt Plant for Standard Oil

The Standard Oil Company has commenced the erection of an asphalt manufacturing plant in the Kern River oil field, not far from its storage farm, where it has 21,000,000 barrels of low-grade oil stored. The capacity of the plant will be 10,000 barrels daily. The company has for some months past been making large quantities of asphalt at its Point Richmond plant, and will make more when the El Segundo plant is completed. The Point Richmond product has been put on the market and has had the effect of closing down four small independent asphalt factories near Bakersfield. It is predicted that the El Segundo product will have the same effect on a number of small concerns in and around Los Angeles.

Cal. Oilfields, Ltd., Interim Dividend

News comes from London, England, of the payment by the California Oilfields, Ltd., the properties of which are all in the Coalinga field, of a ten per cent interim dividend amounting roughly to \$200,000.00. The company's dividends have ranged from thirty to forty per cent.

River Tank Steamer for Standard

The Union Iron Works Co. has had an order placed with it by the Standard Oil Co. of Cal., for a light draft, stern-wheel oil tanker to be used to deliver oil to the Standard's Sacramento river trade. The steamer is to be ready in four months and will cost \$76,000. Capacity, 3000 barrels. Power for delivery will be from gasoline engines. Speed will be about nine miles per hour.

Gas for Fresno

There is a rumor abroad to the effect that an 8-inch pipe may be constructed from the Coalinga field to Fresno to supply the latter city with gas, if sufficient gas can be developed and relied upon. Fresno is 65 miles from Coalinga. The matter is very indefinite.

Big Well in La Habra

A big well was recently brought in on section 24-3-10, La Habra Valley, by the Petroleum Company. The well was No. 2, and was completed at 3222 feet. The initial flow was given as 1000 barrels per day, the oil being between 22 and 23 degrees gravity.

MULCH

Is the name given to the worthless product that troubles some oil wells. Some oil news suffers from a similar complaint. There's no "mulch" in the oil news of the

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Patents Recently Granted

The following patents recently granted of interest to the oil trade, are reported expressly for the California Derrick, by Joseph M. Nesbit, patent attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Well Screen, E. E. Johnson, St. Paul, Minn., 1,040,342.

Underreamer, W. M. Keck, Coalinga, Cal., 1,040,348.

Reversible casing wrench, Frank Hendricks, Los Angeles, Cal., 1,040,540.

Apparatus for saving gas and oil from producing wells, E. A. Starke, Berkeley, Cal., 1,040,806.

Tubing or casing spear, R. C. Glines and H. A. Stier, Orcutt, Cal., 1,041,268.

Pump, W. A. S. Thompson, T. N. Kellett and R. W. Gunn, Los Angeles, Cal., 1,041,375.

Well pulling, cleaning and drilling machine, L. W. Fetzer, Findlay, Ohio, 1,041,453.

Apparatus for cleaning oil wells, M. W. Marsden, Philadelphia, Pa., 1,041,501.

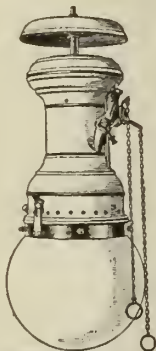
Pump, Rudolph Conrader, Erie, Pa., 1,041,596.

Pipe clamp, A. D. Everett, Garden City, Texas, 1,041,762.

Vent for well tubes, F. G. Garrard, Banner County, Nebr., 1,041,796.

Fuel oil strainer, K. M. Dahl, San Francisco, Cal., assignor to Union Iron Works Co., same place, 1,042,203.

Well pumping apparatus, J. W. Darley, Jr., Baltimore, Md., 1,042,204.



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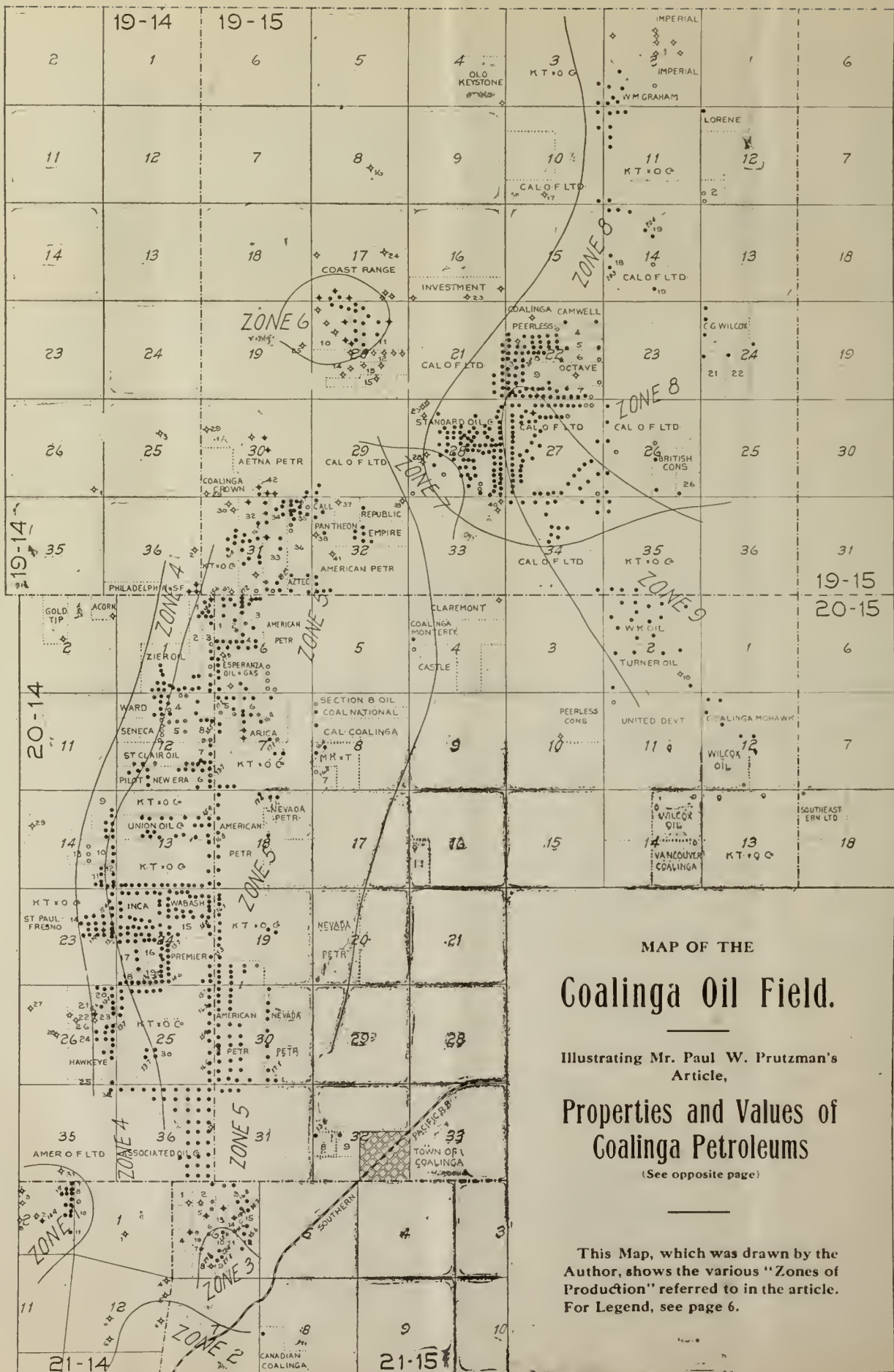
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MAP OF THE Coalinga Oil Field.

Illustrating Mr. Paul W. Prutzman's
Article,

Properties and Values of Coalinga Petroleum

(See opposite page)

This Map, which was drawn by the
Author, shows the various "Zones of
Production" referred to in the article.
For Legend, see page 6.



THE PROPERTIES AND VALUES OF COALINGA PETROLEUMS

Written Exclusively for the California Derrick by

Paul W. Prutzman

Petroleum Chemist and Engineer

The Properties and Values of Coalinga Petroleum

The values, positive and comparative, of the petroleum of any field, are matters of the greatest interest to the producer. The value of any crude oil at the well is, finally, the price for which it can be sold. But there is a very general impression, and one with a measure of foundation in fact, that many petroleum products contain values considerably in excess of the present selling price, these values being sometimes wasted, sometimes realized by the purchaser.

The object of this paper is to point out where these excess values, if any, may be found, and to determine at least approximately their extent. And as such determinations require examples, we will take these from the oils of Coalinga, this field producing oils showing a wide range of weights, qualities, suitabilities and chemical characteristics.

Limitations to Valuation of Oils

The comparative values of any two oils for a given purpose may, in most cases, be determined by test or analysis, and stated with accuracy. But a determination of the positive value of any oil, a value which can be stated in cents per barrel, requires the use of a number of variable quantities, and the determination may be relied on only when the nature and extent of these variables is exactly defined, and only under the exact conditions so laid down.

This may seem obscure—let us take an example. A certain oil may be of such quality that it may be used for fuel, or it may be topped down to road oil, or it may be used for gas-making, or it may be run down to asphalt and distillates, or the latter may be refined into high grade burning and lubricating oils. In each of these five cases the returns from the oil would be different. Further, where any refining is done on the crude, the returns per barrel will vary with the size of the plant, the freight rates from point of output to principal markets, the skill of the refiners, their business capacity and sales ability, and the constantly fluctuating demand for and market price of each of the products. It will be apparent that exact calculations, involving so many factors, can be made only by the individual refiner or marketer, in view of definitely known market and manufacturing conditions, and that they would be good only so long as the scale of prices on which they were based was maintained. Such figures as these, even were they possible, would be of no value to the producer.

Approximating a Positive Valuation

An approximate valuation, reflecting average market conditions, may be arrived at by eliminating the largest possible number of variable quantities, and averaging such as cannot be

eliminated. For instance, we may take the largest common market (San Francisco, in this case) as the basis for all our prices, thus eliminating all freight rates except the crude oil tariff. We may assume that the oil is being handled and topped or refined in large quantities. We may eliminate the lubricating oils, finished kerosenes and other highly refined products in the sale of which there is much competition, thus doing away with any question as to refinery facilities or management, sales organizations or factory costs (except for a distillation charge which may be averaged safely.) And finally, we may set such prices on our finished products as will leave a reasonable margin for sales costs.

Having thus fixed on a common basis for our calculations we may, after analysis of the crude, select the use to which it is best suited, totalize the values of its products, deduct any freight or distillation charges, and thus arrive at a minimum valuation on the oil, which will not need any further allowances for factory costs, sales expense or fixed charges.

Uses for Crude Oils

California petroleum products are used for many purposes, but the only markets large enough to affect the price are as follows:

- 1.—For fuel
- 2.—For gas manufacture
- 3.—For road oiling
4. For asphalt manufacture
5. For topping
- 6.—For complete refining

For each of these purposes, certain qualities are desired in the crude, while others are objectionable. These qualities are, in a general way, as follows:

1. Fuel requirements—

This is a large and complicated subject in itself, and one which we need touch on here in only the briefest manner. The main requirements are: high heating value; freedom from excessive solid impurities; freedom from excessive water, and particularly from salt water; freedom from tendency to emulsify with water; and a low sulfur content.

Excepting for the last, which is now considered of minor importance as regards boiler fuel, these are all properties which must be determined on each individual sample. The second and third depend rather on the handling of the well, and of the oil after production, than on the properties of the oil itself.

We may assume, for the present purpose, that any of the Coalinga oils which is not more valuable for other purposes is

a satisfactory fuel. Indeed, the lower grades of Coalinga crude are probably above the average fuel quality, the viscosity and sulfur both being low, while because of a lack of any tendency to emulsify with water these oils may be readily brought to the market in a pure condition.

2. Requirements for Gas Manufacture.

The first essential in a gas making oil is a low sulfur percentage, the removal of a large proportion of sulfur compounds from the crude gas being highly expensive. Other desirable qualities are; a low asphalt percentage, and a high proportion of middlings, such oils making more gas and less lampblack than the highly asphaltic oils.

The exact valuation of an oil for gas manufacture is a tedious matter, and the results might be open to argument. We will content ourselves here with pointing out such oils as are more or less suitable for gas making, and comparing them with oils from other fields.

3. Requirements for Road Oiling.

The chief requirement in an oil to be used for road building is a high percentage of asphalt, combined with sufficient fluidity to make application feasible at a moderate temperature. Further, the oil should be of such chemical structure as to harden, by evaporation or oxidation or both, to a firm and resistant asphalt. Some specifications also set a maximum sulfur percentage, though this seems of doubtful wisdom, as the sulfur certainly assists in the rapid oxidation and hardening of the oil after it is spread.

Very few of the Coalinga crudes contain enough asphalt ready formed to be very desirable road oils, though any of the lighter oils (from zones 5, 8 or 9) may be reduced to such consistency by topping. These oils, being unusually stable, are likely to be slow drying, though on oxidation in air they leave asphalts of excellent quality. The low sulfur percentage, far within any specified limits which have come to the writer's attention, also tends to retard hardening.

As a whole, it may be said that typical Coalinga crudes are only of fair quality as road oils, not of the highest grade.

4. Requirements for asphalt manufacture.

This industry calls for an oil giving a high yield of asphalt,

and secondarily, for one which is not too tender, i. e., subject to decomposition in the still.

The lighter grades of Coalinga crude, particularly those from zone 9, are defective in the latter respect, though this is not true of the heavier grades from zones 4 and 5. However, only a few samples from Coalinga yield enough asphalt to enable them to compete with Kern River, Sunset and Cat Canon oils, and as transportation conditions locally are unfavorable, no attempt to enter the asphalt market on a large scale with Coalinga oils is likely.

The four uses noted above are practically for oils of fuel grade, and we need look for no excess values here, except in individual cases. So far as asphalt manufacture is concerned, the market is now and will likely continue to be, over supplied with heavy asphaltic oils. Crudes particularly suited to road oiling or to gas making may, it is true, command a slight advance over the usual fuel price, but it is to topping and refining that we must look for any material advance in value over the price fixed by competition for fuel oils.

Topping and Refining Values

As has been said, the final net value of any oil to the refiner will depend on a number of variable, local and individual conditions, and the means by which these variables may be eliminated or averaged have been mentioned. Before attempting to set a value on any sample of crude, we must fix on a scheme of analysis to be applied to each, and a scale of prices for the products, stating the basis for these prices.

It should be noted that the calculations made below are valid only on the basis given, and that under other conditions they may be wide of the mark. This should be borne in mind, and due allowance made, as otherwise the figures might be highly misleading.

Topping plants remove only so much of the lighter constituents of the crude as will leave a residue suitable for fuel or for road oil. Where the oil is completely refined, the fuel residue is further separated into middlings or fuel distillates, lubricating oils and asphalts. We will therefore separate our samples into:—gasoline, engine distillates, kerosene stock, middlings, lubricating stock and asphalt, or in place of the last four, a fuel residue. The properties, values and demand for each of these products is as follows:

Gasoline.

The tendency of the trade for several years past has been toward lower gravities for gasoline, and this article may be found in the market at as low a gravity as 58 deg. Be. We will assume 61 deg. as a standard, partly because Coalinga crudes tend toward a high boiling point for any given gravity, partly because conservative practice prefers a thoroughly satisfactory product to the maximum yield. In two or three cases where a higher gravity is reported, the makeup of the oil was such that a gasoline of the usual gravity would not have given good results in use.

The local demand for gasoline is now greater than the supply, and as all present indications are that this condition will continue, prospects are good for even higher prices. In fact, only two conditions could reverse this tendency, one the discovery of a very prolific field of light oil, the other a sufficiently general introduction of heavy oil engines to materially reduce the demand for gasoline. The first seems very unlikely, the second is, the most sanguine must admit, some years in the future.

The present price of gasoline in drums, San Francisco, is 17 1-2 cents per gallon. We will assume the value of this product in the refinery tanks to be 16 cents, the difference covering wear and tear on drums, a small sales charge, leakage and evaporation. The price is probably slightly below the average return on this product.

Engine Distillates.

These are made in many grades and gravities, running from a near-gasoline to a raw kerosene. We will assume a gravity of 52 deg. for oils completely refined, as this leaves the kerosene stock intact, and of 48 deg. for topped oils, as in general this leaves the residue with about the right viscosity.

The demand for engine distillates, particularly for the lower grades, is a growing one, but the market is not under supplied, as in the case of gasoline, and except where local conditions are favorable, engine distillates cannot be sold in large quantity without some effort. Still, these goods do not require the continued effort needed to build up a trade in burning oils or lubricants and may be classed as readily saleable.

The market for engine distillates vary widely, at different points and for different gravities. We will assume prices of 8 cents for 52 deg. and 6 1-2 cents for 48 deg., these being about

MAP OF THE COALINGA OIL FIELD

LEGEND		
Section Lines — — —	Township Lines — — —	Property Lines — — —
Production zones — — —	Producing wells •	Try holes etc. — — —
Producers abandoned •	Drilling wells •	Status unknown — — —

Index to Numbered Wells and Tracts		
1 - Royal Oil Co.	2 - Roanoke Oil Co.	3 - Occident Oil Co.
1 - C.G. Wilcox	15 - Crescent	29 - Santa Clara
2 - British Cons.	16 - Old Kayatone	30 - Producers Guar.
3 - Sauer Rough	17 - Bonanza King	31 - Zenger
4 - Good Luck	18 - Avon	32 - Confluence
5 - Camwell	19 - Kaweah	33 - Maine State
6 - Twenty Two	20 - Tavern	34 - Murray II
7 - Record	21 - Pittsburg	35 - Commercial Petr.
8 - Associated	22 - Montana	36 - W.M. & W. II
9 - Caribou	23 - Big Shell	37 - Corona
10 - Coalinga Oil	24 - Independent	38 - Keystone
11 - Home, of Coalinga	25 - Cal. Oil & Gas	39 - Wisconsin
12 - Selma, Zenith and Mutual	26 - Coal. Metropolis	40 - Minnesota
13 - Phoenix	27 - Pauna	41 - Ajax
14 - New York	28 - Cal. Rock Oil	42 - Golden State
1 - Fresno San Fran.	12 - St. Elmo Oil	23 - Caladonian Crude
2 - Penn Coalinga	13 - Ophir	24 - California Coalinga
3 - Cypress	14 - Coalinga Western	25 - California Crude
4 - Spinks Crude	15 - Claremont	26 - Ecuador Petr. Co.
5 - Coalinga Unity	16 - Morse	27 - Wright Association
6 - British Cons.	17 - Traders	28 - Brown & Shillington
7 - B. & B. Oil	18 - Euclid Traders	29 - A.P. & Co.
8 - Shawmut	19 - Wavango	30 - Leroy & Griffith
9 - Coalinga Petr.	20 - Ozark	31 - Sunnyside
10 - Merrill Oil	21 - Angelas	32 - Circle
11 - Arizona Petr.	22 - Blue Diamond	
1 - Mercantile Crude	5 - Section 7 Oil	9 - Junco
2 - New York Coalinga	6 - Coalinga-Pacific	10 - Carmelita
3 - New S.P. Crude	7 - Coalinga Security	11 - British Calif.
4 - S.W. & B. Oil	8 - Valley	
1 - Badger State	5 - Fifty Seven Oil	9 - Berkeley-Coalinga
2 - Zenith	6 - Commercial Petr.	10 - Washington
3 - Wastlake-Rommel	7 - White Creek-Coal.	11 - Phelps & Chend
4 - Coal. Great Western	8 - Spokane-Coalinga	
1 - Section 6 Oil	6 - Shreeves	12 - DeLuxe
2 - Jefferson	7 - Six Acres	13 - Red Top
3 - Cal. Oil & Gas	8 - Pacific States	14 - Coalinga Aladdin
4 - Varion	9 - Blue Moon	15 - Lucille
5 - L.A. Oil Synd.	10 - Silver Tip	16 - Uriel
	11 - Amy	

1 cent below the drum price, San Francisco, of water white and sweet naphthas of these gravities.

Kerosene Stock.

A cut of 44 deg. to 42 deg. Be. bulk gravity is made below the engine distillate where crude is completely refined, though where the oil is topped this cut is seldom made, as it usually leaves the residue too heavy.

The manufacture of kerosene from this cut (or from a deeper cut in which this is included) is a more difficult matter than is usually supposed, though this stock as taken from Coalinga oils is refined with unusual ease. In any case, the charges for fuel, labor, chemicals, packaging and sales eat heavily into the price received for the finished article, the last in particular, as kerosene enters a highly competitive market.

While the figure will by no means fit all cases, it is safe to assume as an average condition that a raw 42 deg. cut is worth to the refiner about the price available as a heavy engine fuel, or say 4c bulk, San Francisco. Some plants will realize a better figure, but this because of local or individual advantages as to market or sales organization, having no bearing on the average conditions which tend to fix prices.

Middlings.

Following the kerosene stock we have a large percentage of oil running from 37 deg. down to 26 deg. or 24 deg. Be., which is cut into various grades of burner fuel, from 34 deg. to 28 deg. Be. The lighter grades are purified by chemical treatment, the heavier sold in a raw state.

The market for the lighter grades of burner fuel is strictly limited, and that for the heavier qualities usually oversupplied. Large amounts, however, may be sold at a price slightly in advance of that of crude, or from 2 1-2 cents to 2 cents per gallon, bulk. We have taken the flat value of this cut, just as it comes from the crude, at 2 1-4 cents per gallon.

Lubricants.

Finished lubricating oils often bring a high price in the retail market, but the relation of these prices to the value of the crude is sometimes entirely misunderstood.

In the first place, the lubricating oil market is competitive in the highest degree, and sales charges alone on any large output of lubricating oils eat up a material part of the selling price. Again, the manufacture of high grade lubricants is a tedious and involved process, using much labor, fuel and chemicals, and wasting from ten per cent to as much as fifty per cent of the oil treated. And last, much the larger part of the lubricating oils made in California are not the high grades which bring fancy prices, but machine and engine oils selling in earload lots, naked, at from 5 1-2 to 9 cents per gallon.

In brief, the values in lubricating oils are not inherent in the stock separated from the crude, but are created in the refinery and the sales department, and the producer cannot expect to share in these values except in a few cases where his stock is of such nature that it will either produce a finished article of exceptional quality, or will yield a staple article at an unusually low refining cost. With two exceptions, these conditions do not obtain in Coalinga, the lubricating stocks being in general merely of good average quality, and on a parity with the stocks from Kern River, Sunset, Summerland and Los Angeles crudes.

It cannot be doubted that in time the lubricating oil industry in California will develop to the point where there will be competition for raw stocks of the better grades, but this time is far in the future and at present satisfactory stocks can be bought in quantity for the price of fuel crude plus distillation cost. We have therefore figured on a value of 84 cents per barrel, bulk, San Francisco, for this stock, but will point out, in some cases, special qualities in the stocks from certain crudes, which will effect their values when the demand for such oils increases.

Asphalt.

The present earload price of asphalt at Pacific Coast common points is about \$10.50 per ton. From this must be deducted barrels, and cost of barreling, warehousing and loading, leaving in round figures \$6.00 per ton, or 3-10 cents per pound, as the value of asphalt in the cooling kettle.

Fuel Residue.

Fuel residues from topping plants are neither more nor less desirable than crude oils of equal gravity and purity, and they are therefore figured at 75 cents per barrel, San Francisco. This price is possibly a little high, as it is not supposed to cover any sales expense.

COALINGA PETROLEUMS

The crude oils of Coalinga are of unusual interest, from the wide range of qualities and characteristics shown. In weight

alone they range from 12 deg. to 45 deg. Be., in volatility from a tar having a flash point close to 300 deg. to a light naphtha leaving no residue on evaporation, in sulfur percentage from a slight trace to a maximum of 1.0 per cent and in constitution from a semiparaffin oil, containing much crystalline paraffin, to a crude at the opposite end of the scale, containing neither paraffin nor asphalt, and approaching the artificial tars in structure.

With but three exceptions, all the varieties of crude found in California are represented in the output of this field, these exceptions being: the so-called paraffin oils from Humboldt, Tunitas (San Mateo Co.) and Moody Gulch (Santa Clara Co.) these being only approached by the oil from the Canadian Coalinga well; the high boiling aromatic crude found in the quicksilver mines of Humboldt and Napa counties, but apparently nowhere else; and the high sulfur oils of Salt Lake and Cat Canon, which have no counterpart in this field.

ZONES OF PRODUCTION

Despite the wide range of qualities, the crudes of Coalinga may be divided into a small number of groups showing close relationship. A geological grouping is of interest, as there is a striking connection between the age of the various formations of this field and the oils produced from them. A chemical classification would be instructive, but is wide of the present purpose. Fortunately, the most practical grouping, that along strictly commercial lines, distinguishes the geological divisions also, and gives a hint at the chemical classification.

On reference to the attached map, the reader will note a number of curved lines dividing the field into areas or zones. These bounds define, roughly, the limits within which oils of a certain common quality are produced. Where the zones overlap, as in the case of 7, 8 and 9, one character of oil is produced from a lower sand, and a different oil from an overlapping upper sand.

Zone 1

This area is not yet exactly bounded. It is apparently limited at the west by the cropping of the sands, and at the east by considerations of depth, so that we may assume that as finally developed it will show a narrow strip of production along the east line of 2-21-14, extending an unknown distance to north and south.

At present the only production is from a group of some ten or twelve wells on the N. E. quarter of 2-21-14, ranging from 250 to 350 feet in depth, and making from 10 to 40 barrels per day each. This production appears to be from rocks of Cretaceous age (Bulletin 398, U. S. G. S., Arnold.)

This oil is of a uniform and most peculiar quality, bearing no resemblance to any other oil found in Coalinga, and but little to any other oil found in this state. It is of a strong olive green color by reflected light, while in thin layers it is of an orange brown hue, very distinct from the color of the asphaltic oils. The odor is strongly sulfurous. This oil is completely soluble in the lightest gasoline and contains no asphaltene. The analytical tests are as follows:

6495 - White Creek - Coalinga O. & D. Co. Lease Average
Gravity 18.4 deg. Be. - 0.9432 - 7.84 lbs. per gal.
Viscosity at 60 deg. F. 44.1 (Engler, water taken at 1.00)
Flash 216 deg. F. (open cup)
Sulfur 0.67 per cent. by weight

Distillation

Gasoline	None
Engine Distillate	None
Kerosene	None
Middlings	29.6 deg. 30.0 per cent.
Lubricating Stock	21.4 deg. 52.0 per cent.
Asphalt	"D" 18.0 per cent.

100.0 per cent.

This crude is strictly a lubricating stock and has no other refining value. The low percentage of sulfur makes it suitable for a gas oil, though the percentage of asphalt is somewhat large for this use.

The heavy (lubricating) distillate is of entirely different character from that yielded by the black oils, being more stable during distillation, with a strong green overtone, even at the light end, and very pale. The asphalt yielded by this oil is formed during the distillation, and is not present in the crude.

Zone 2

A single well on the S. W. quarter 8-21-15 produces an oil of quite different quality from that found in zone 3. This difference is the only present reason for assigning this well to a

separate zone, as the intervening territory has not been drilled, and the relation, if any, between the two areas is not known.

This is a limpid oil of a greenish tint, far from the olive green of the oil from zone 1, but much purer than the greenish brown of the oil from zone 3. The odor of this oil is spirituous, but rather sharp, not at all sulfurous. It precipitates a slight trace only of asphaltene. The analytical figures are as follows:

6188—Canadian Coalinga Oil Co., well No. 1.	
Gravity	28.0 deg. Be. - 0.8861 - 7.36 lbs. per gal.
Viscosity at 60 deg. F.	5.0
Flash	Below 60 deg. F.
Sulfur	0.54 per cent.

Distillation—

Gasoline	61 deg.	14.1 per cent.	14.1 per cent
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Per barrel of 42 gallons.

Gasoline	61 deg.	14.1 per cent	5.92 gal.	94.7c
Engine distillate	48 deg.	2.5 per cent	1.05 gal.	6.8c
Kerosene stock	42 deg.	7.6 per cent	3.19 gal.	12.8c
Fuel residue	19.5 deg.	75.8 per cent	75.8 bbl.	56.9c
Less freight and loading, 1 barrel				40.0c
Less distillation charge, 1.4 barrel				5.0c

Net value of crude, per barrel

171.2c	45.0c
	126.2c

Zone 3

This area, which is not yet bounded at either south or east, produces a light oil from an upper sand which, at least at the northern end of the zone, is underlain by sands producing a much heavier oil. The light oil producing top sand extends farther north than the limit shown on the map, but yields only small quantities, while the oil here is heavier than that produced from the same sands at the south line of the section. For instance, in Lucile 1 the top sand gave an oil of 18.9 deg., while in the Blue Moon and Pacific States wells the same sand gives an oil of 27 deg. or better.

This is a limpid, black oil with a slight greenish tinge. The odor is mild and gassy, not sulfurous. This oil gives a slight precipitate of asphaltene, and appears to be a normal asphaltic oil, though the proportions of light products are unusual. The analytical figures are as follows:

6494. Blue Moon Oil Co. Well No. 1.	
Gravity	27.2 deg. Be. - 0.8906 - 7.40 lbs. per gallon.
Viscosity at 60 F.	5.0
Flash	Below 60 deg. F.
Sulfur	0.98 per cent

Per barrel of 42 gallons.

Gasoline	61 deg.	6.6 per cent	2.77 gal.	16c	44.3c
Engine Distillate, 52 deg.	52 deg.	3.6 per cent	1.51 gal.	8c	12.1c
Engine Distillate, 48 deg.	48 deg.	6.0 per cent	2.52 gal.	61.2c	16.4c
Kerosene stock	42 deg.	11.7 per cent	4.91 gal.	4c	19.6c
Fuel Residue	20.0 deg.	72.1 per cent	72.1 bbl.	75c	54.1c
Less Freight and loading, 1 barrel					40.0c
Less distillation charge, 0.3 barrel					6.0c

Net value of crude, per barrel

146.5c	46.0c
	100.5c

(To Be Concluded)

Companies Completing Wells In October

(By Fields)

Kern River Field: Kern Trading & Oil Co., 4; Walker-Heck Oil Co., 1; Tejon Oil Co., 1; Kern Four Oil Co., 1; total Kern completions, 7. McKittrick Field: K. T. & O. Co., 1; Associated Oil Co., 1; both on section 13-30-21. Total McKittrick completions, 2. Belridge Field: Belridge Oil Co., 3 on sections 32 and 33-28-21; General Petroleum Co., 2 on section 3-29-31. Total Belridge completions, 5. Midway Field: Engineers Oil Co., 1; McGinn & Henderson, 1; R. H. Henderson, 1; Bankline Oil, 1; Dome Oil, 1; United Oil, 1; Cal. Amal. Oil, 1; Mammoth Oil, 1; Traders Oil, 1; K. T. & O., 5; General Petroleum on Bear Creek property, 3; on Holloway field 1 and Nevada Midway 2; Honolulu Cons., 2; Baltimore Oil, 1; Union Oil, (Bedrock lease) 1; C. C. M., 1; Standard Oil, 3; one each on sections 36-31-23,

Engine Distillate	48 deg.	2.5 per cent.	2.5 per cent
Kerosene Stock	42 deg.	7.6 per cent.	7.6 per cent
Fuel Residue	19.5 deg.	75.8 per cent.	
Middlings	33.0 deg.		19.4 per cent
Lubricating Stock	27.3 deg.		42.5 per cent
Asphalt	"D"		14.2 per cent
		or 49.8 lbs. per barrel.	

100.0 100.0

The light products from this oil, without treatment, are only fairly pale and sweet. The yields are normal for an oil of this gravity.

The heavy end of the oil is of little value, in spite of a fair yield of asphalt, the lubricating stock breaking down badly, and containing much paraffin. This is strictly a topping oil, and figures as follows:

Distillation			
Gasoline	61 deg.	6.6 per cent.	6.6 per cent.
Engine distillate	52 deg.	3.6 per cent.	3.6 per cent.
Engine distillate	48 deg.	6.0 per cent.	6.0 per cent.
Kerosene stock	42 deg.	11.7 per cent.	11.7 per cent.
Fuel Residue	20.0 deg.	72.1 per cent.	.....
Middlings	33.0 deg.	.....	12.4 per cent.
Lubricating stock	27.5 deg.	.....	51.7 per cent.
Asphalt	"D"	.....	8.0 per cent.

100.0 100.0

The analysis of this oil is unusual, in that it is but seldom that a 52 deg and a 48 deg. cut will run at one distillation from the same oil. For an oil of this gravity, the proportion of gasoline is low, and of engine distillate high.

The light distillates from this oil are fairly sweet only. The heavy end is valueless, the lubricating stock being too light, and decomposing badly. This is strictly a topping oil, and as such figures as follows:

12-32-23 and 30-32-24. Total Midway completions, 28. Sunset Field: Obispo Oil, 1; K. T. & O., 1. Total Sunset completions, 2; Coalinga Field: Standard Oil (Sonntag well) 1; California Oilfields, Ltd., 1; American Petroleum (both 6-20-15) 2; Ozark Oil, 1. Total Coalinga completions, 5. Santa Maria Field: Dome Oil, 1; Union Oil, 1; Western Union, 1. Total Santa Maria completions, 3. Santa Paula Field: Montebello Oil, 2; Sespe Cons. Oil, 1; White Star Oil, 1. Total completions 4. Salt Lake Field: Rancho La Brea Oil, 1; Amalgamated, 2. Total 3. Whittier-Coyote Field: Murphy Oil completed one well. Fullerton-Brea Canyon Field: Petroleum Co., 1; Fullerton Oil, 1; Petroleum Development Co., 1. Total, 3. Lost Hills Field: Devils Den Consolidated Oil, 1; Standard Oil (on section 4-27-21) 4. Total 5. Total completions in California during September, 67 wells. Total new production of same is rated as 28,020 barrels per day.

California Production for and Field Operations During October, 1912

All Records Broken

Both in production and consumption the month of October was the greatest in the history of the oil business of California. In production the increase over the previous month was 577,529 barrels of which close to 500,000 barrels was furnished by the Kern Trading & Oil Company's great midway gusher, which has now subsided, while the flood-tide monthly output for the state reached up to and over the 8,000,000 barrel "mark;" to be exact, it totalled 8,158,814 barrels of oil.

If production amazes, how much more so does consumption! The gain, if it had been a half million barrels, would have been heralded as remarkable; but, totalling as it does twice that amount, and with no apparent reason, it is almost staggering. The consumption figures for October show a clear gain over those of September of 1,099,715 barrels! The grand total consumption of oil in October is seven and three quarters million barrels! The daily average shipment exceeded a quarter of a million barrels! Surplus for the month was lower than for any month during the last two years with the single exception of August. With the tendency on the part of many operators to curtail still in marked evidence, providing no phenomenal new gushers are brought in, the high tide in production in October will probably remain the record for some time to come. Although it appears scarcely safe to prophesy. On the other hand consumption has probably achieved a record that will stand for several months, or possibly a long time, as consumption of nearly eight million barrels monthly is not likely to be maintained in the next few immediate months unless a new market has been discovered. In short, it appears as though October would be the record month of the current year as but two months yet remain to be heard from, no new gushers are reported up to December 12 that were not known of since the issuance of the October report and for the further reason that as their contracts expire one by one, the "under-18-gravity" people curtail the general output more and more either by shutting down entirely or by restricting their production, merely to the demand they feel or their storage capacity. In the matter of storage a gain is, of course, recorded; total of same, 236,798 barrels; total storage on hand in California on Nov. 1, was 46,304,866 barrels.

The Kern Trading & Oil Company gusher in the midway

field made a production that causes Midway to break all its former high marks. Combined with Sunset the Midway production totalled 3,129,551 barrels; alone it amounted to 2,639,285 barrels of oil. Sunset-Midway, Coalinga, Kern River, McKittrick (including Belridge) and Lost Hills furnished more than three fourths of the total output for October. In the southern fields, Fullerton's production dropped 20,000 barrels; other southern fields show a general gain. Of the coast fields Santa Maria leads all by about 400,000 barrels; the coast fields are divided as follows: Santa Maria, Lompoc, Summerland, Watsonville. Santa Maria's gain in October over September output totalled 25,000 barrels.

Well Records and Other Field Operations

There are now 5650 wells producing oil in California. This is a gain over September of 61 wells. Most of the new producers being in the Kern county fields. As an indication of the fact that certain large companies are going right after the oil, the record shows the erection of 67 new rigs, of which the majority are located north of the Tehachapi mountains. There were, in all, 353 wells drilling, which is 44 drilling wells less than the previous month. But 3 wells were abandoned; 1 in Kern River, 1 in Midway and 1 in Salt Lake.

Stocks or Storage

Another over-estimation in the stock report has been discovered. It totals but 150,000 barrels which, in estimating oil in sumps, and allowing for evaporation and shrinkage, taking into consideration the vast amount of oil above ground, is by no means surprising. The main facts to bear in mind concerning the October report are: first, production has passed eight million barrels, a half million barrels of which came from one gusher; second, and more important, consumption totalled practically seven and three-fourths million barrels, due to a constant expansion and the great efforts of the marketers to increase the demand; third, and last, without the production of the one well referred to, the consumption would have exceeded the production; and that that one well is now reported off the producing list. Finally, the efforts to entail the low grade production are still very much in evidence. These facts being known the reader is left to draw his own conclusions.

Following is our detailed monthly report giving all the facts in figures for each field:

County	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Prod. for Month
Kern River .....Kern	2	3	1660	6	1	1,016,645
McKittrick .....Kern	8	18	232	7		597,065
Midway .....Kern	35	132	723	28	1	2,639,286
Sunset .....Kern	7	26	251	2		490,265
Coalinga .....Fresno	7	63	892	5		1,662,174
Watsonville .....Santa Clara		1	5			3,720
Arroyo Grande .....San Luis Obispo						
Lompoc .....Santa Barbara		2	21			84,940
Santa Maria .....Santa Barbara	2	21	152	3		484,809
Summerland .....Santa Barbara			122			5,725
Santa Paula .....Ventura	5	22	301	4		67,943
Newhall .....Los Angeles		2	77			9,672
Salt Lake .....Los Angeles	4	14	286	3	1	225,601
Los Angeles .....Los Angeles			401			33,965
Whittier-Coyote .....Los Angeles	1	16	143	1		100,608
Puente .....Los Angeles		1	56			2,480
Fullerton-Brea Canon .....Orange	5	15	282	3		603,340
Lost Hills .....Kern	8	15	46	5		130,576
Salinas Valley .....San Benito						
and Monterey		1				
Repetto .....Los Angeles		1				
	84	353	5650	67	3	8,158,814

Summary

	Barrels.
Stocks, Sept. 30, 1912.....	46,068,068
Less overestimation of stocks by producers	150,000
	45,918,068
Production, October, 1912.....	8,158,814
	54,076,882
Consumption, Oct. 1912	7,772,016
	46,304,866
Stocks, Oct 31, 1912	46,304,866
Daily Average Production.....	263,188
Daily Average Consumption.....	250,710
Daily Average Surplus.....	12,478

Withdrawn "Oil" Land Restored

Notification of the restoration to agricultural entry by homesteaders of large tracts of land in Kern County, which were withdrawn as oil lands, has been received at the Visalia

land office. The lands returned to the public domain were known when withdrawn as Reserves No. 2, No. 18, and No. 20.

The given reason for the return of the lands is "that the director of the geological survey reports that the lands are not valuable for the purpose for which withdrawn."

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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*Derrick's
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The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

THE WANING YEAR

We feel no sorrow at the closing of 1912. We feel it has been a hard year for the majority of oil producers in California... Prices have scarcely repaid operating costs in many instances and in some cases have not even done this, though for various reasons it has been necessary to produce in spite of this fact. Again many operators have shut down their leases.

This year has been the greatest, in point of production and consumption that our state has ever known. Especially has the consumption gain been remarkable. That is the reason that 1913 looks good to the oil man. And that is the reason it looks good to us. We welcome the new year with a feeling of confidence that it will be a much better year all around financially than 1912, as far as the oil business is concerned.

We wish all our readers and the oil industry of California a most prosperous 1913. We believe they will have it, too.

* * * * *

THE PROPERTIES AND VALUES OF COALINGA PETROLEUMS

In this issue of the Derrick Mr. Paul W. Prutzman contributes a paper to which we wish particularly to direct the attention of our readers. As a petroleum chemist of wide note, Mr. Prutzman's name commands immediate recognition. For more than fifteen years, in the course of a laboratory practice devoted entirely to California oils, he has been collecting and testing samples of our petroleum, until he has in his laboratory today a collection which for completeness is probably unrivalled, outside of one of the great refiners, while the analyses which he has made, literally by the hundred, give him an unequalled knowledge of California oils, and qualify him to write with final authority on this subject.

The greatest interest attaching to a paper of this character arises from the fact that the subject is one which the purchasers of oil naturally do not discuss. But the seller has a very lively, natural interest in knowing the value of his oil to the purchaser, and on this subject almost no one, outside those in the employ of the large refiners, is competent to advise him. The Derrick considers itself very fortunate in being able to offer an article dealing so comprehensively with this subject, and hopes, during the coming year, to be able to follow it with other articles by eminent authorities, dealing with a number of the less known phases of the oil and asphalt trade.

* * * * *

NOVEMBER FIGURES IN BRIEF

The November report comes to us too late to allow us to give it in detail, but the main figures we present herewith.

November's production falls almost half a million barrels below that of October, while consumption displays a like falling off, of slightly more than a half million barrels, from the phenomenal shipments of October. Nevertheless, consumption shows a wonderful gain over earlier months in the year. Consumption for November totals 7,236,923 barrels, exceeding September's shipments by 563,000 odd barrels. Production for November totalled 7,676,176 barrels; storage for month, 439,244 barrels. Average daily production, 255,872

barrels; average daily consumption, 241,231 barrels; average daily surplus, 14,641 barrels. Which shows that supply and market are very close together. Any doubts as to October being the banner month for both production and consumption during 1912 are no longer possible.

The field report for November shows 73 rigs completed, 395 wells drilling, 5627 wells producing, 50 wells completed during the month and 9 abandoned.

The total storage on Nov. 30, was 46,744,119 barrels of oil. Regular detailed report in our next issue.

* * * * *

DECEMBER RECORD

DIVIDEND MONTH

All the signs point to December as being the record dividend month of 1912. In the first place Standard Oil pays its dividends on the 15th of \$2.50 per share; on the total issued stock, 450,000 shares, this amounts to \$1,125,000. Add to this the regular monthly dividends, always totalling in excess of a half million, and the quarterly dividends falling due this month, and December, in our belief, will take its place as the record dividend month of the year. The advent of the Standard's quarterly payment will greatly swell the total and make the oil business more attractive from a dividend point of view than it has been the last year or so. We should not be at all surprised to see the December disbursements reach or pass a total of \$2,000,000.

* * * * *

GERMAN PETROLEUM MONOPOLY

The introduction of the petroleum monopoly bill into the Imperial Parliament of Germany at Berlin on the 7th of December, is reported to have created practically no interest among the members, the opinion being expressed at the time that it is impossible for the bill to pass in its present form. Secretary of State Herman Kuehns, who introduced the bill, said that it was not directed against either the United States or against the Standard Oil Company, unless the latter was seeking to attain a monopolistic position in Germany; but that it was a purely non-partisan and economic bill, "intended to protect the German empire from having to depend upon a foreign monopoly" for its petroleum supply. The members of the German parliament disagree and the result is that another bugaboo disappears from public notice.

Mineral Industry In California In 1912

State Mineralogist Wm. H. Storms is out with an estimate of total mineral production in California in 1912, placing the value of the same at \$91,500,000; an increase of \$4,000,000 over that of 1911. The value of petroleum during this year he places at \$41,000,000, 105 per cent higher than the closest competitor, gold, which he places at \$20,000,000. An important statement on "asphalt" is the following:

While practically all the asphalt used in the state is a refined product, it is often listed with the total mineral output, in which case the total figure would approximate \$95,000,000.

October Exports From San Francisco

Exports from San Francisco during the month of October were about three-fourths of a million gallons greater than during September, the gain being very noticeable in the shipment of residual oil. There was a gain of about 450 per cent in naphtha and gasoline exports over those in September, neither month showing in large figures at that. The lubricating and paraffin oil shows a gain of about 11,000 gallons in shipments, but owing to the position of the oil carriers that transport oils, illuminating shipments were some 3,250,000 gallons smaller than for the previous month. This brought down the total value from that of September, when it reached \$596,972. As against no crude exports in September, October shows a small shipment of 5374 gallons, valued at \$328. Following is a table giving the various shipments and values in detail:

Table Shows Exports From San Francisco During October

	Gallons	Dollars
Crude	5,374	\$ 328.
Illuminating	7,649,353	329,664.00
Lubricating and Paraffin	59,179	12,844.00
Naphtas, Gasoline, etc.	66,438	8,701.00
Residuum, Gas Oil and Fuel Oil, etc.....	11,790,045	181,447.00

Total exports and value 19,570,329 \$530,984.00
It might be added here that shipments of all kinds of oils from the United States to the end of October this year, total 1,522,556,931 gallons with a value of \$100,509,402! Which serves to show the magnitude of America's petroleum industry.

The Meeting of the Eighth International Congress of Applied Chemistry

Written for the *California Derrick* by

Professor Edmond O'Neill, Dean of Chemistry, University of California.

The eighth international congress of applied chemistry was held in Washington and New York last September. The opening meeting was held in Washington. President Taft presided and delivered an address. The remainder of the meetings were held in New York, since 4000 members were in attendance. Five general addresses were delivered by distinguished European chemists. In the sections, of which there were twenty-four, 709 papers were read. These papers were published in twenty-four volumes, numbering 5040 pages. They dealt with all phases of chemistry from pre-theoretical to conservation of natural resources. In the section of fuels and Asphalts were presented most of the papers dealing with petroleum but some phases of this subject were discussed in other sections, notably the sections of organic chemistry, coal tar, colors and dye stuffs.

In the section on fuels and asphalts were presented thirty-seven papers, making 371 pages of one volume of the proceedings. One of the interesting papers was presented by Zoloziecki and Zielinsky on the production of asphalt from a crude oil, containing no asphaltum. They showed that the per cent of asphaltum in this oil could be increased by treatment with various substances. Some twelve different bodies were tried. The best results were obtained with aluminum chloride, phosphoric acid and zinc chloride. Sulphur alone gave only a slight increase, but sulphur and aluminum chloride increased the asphaltum six fold. With some reagents light increased the yield while in others the percentage was diminished. The greater the heat, the larger the amount of asphaltum produced. The authors concluded that the production of asphalt is due to the polymerization of certain constituents of the crude petroleum.

Another interesting paper was by Allen and Jacobs in which they discuss some ten different methods of determining water in petroleum. They find that direct distillation of the oil, preferably in an electric still, gives the most accurate results. Distilling the oil with a nonmiscible liquid is more convenient but not quite so accurate.

A paper by one of the U. S. navy men shows the advantage of oil over coal for war vessels. He predicts that before long all war vessels will be oil burners. As it is, all torpedo boat de-

stroyers constructed since 1907 (of which there are 27) burn oil exclusively. Eight battleships burn oil in conjunction with coal. The two newest battleships, the Nevada and the Oklahoma, will burn oil exclusively. He also discussed the use of gasoline engines and heavy oil internal combustion engines (of the Diesel type.)

Space forbids the discussion of other papers read in this section. They deal with all phases of the subject.

A meeting of the international petroleum commission was held during the session of the congress. The regular meeting of this commission was held in Vienna in January of 1912 and the proceedings were published in a volume of some hundreds of pages. The papers and discussions were of purely scientific interest. It was attended by a number of the foremost chemists interested in petroleum and gave one the opportunity of meeting the authorities on this subject and discussing questions of mutual interest.

The large refineries in the vicinity of New York were open for inspection and many of the visitors availed themselves of this privilege. The Standard and the Tidewater companies were very hospitable and a pleasant afternoon was spent in visiting their works.

While the section on fuel and asphalts was one of the largest, the other twenty-three sections, covering all phases of applied chemistry, were well attended, and one could not fail to employ his time profitably in listening to the papers and discussions, and meeting the chemists interested in the various phases of the subject. In fact there was an embarrassment of riches. There were so many things to choose from. To add to this complexity several other chemical societies held their meetings simultaneously with the congress. The American Chemical Society, The Society of Chemical Industry and The Vienna Deutsch Chemiker were all in session during the week. In addition there were simultaneous meetings of several engineering societies. Among all these organizations the best of feelings prevailed and it resulted in the greatest gathering of scientists ever held in this country and the most interesting and profitable meeting that the international congress of applied chemistry has ever held.

Refuse Thirty-Five Cent Offer

The oil marketing association, which consists of a number of the oil companies and individual operators producing oil under 18 degrees in gravity, who formerly sold their oil to the Standard Oil Co., have refused offers from both the Independent Oil Producers Agency and the General Petroleum Company. These offers were for thirty-five cents per barrel. The oil controlled by the "Marketing Association" is given as 10,000 barrels per day. The companies affected have signed an agreement not to sell their oil for the next sixty days "except as an association in its entirety." Col. Tim. Spellacy is the hope of the association. At this meeting Col. Spellacy is quoted as saying as follows:

"I suggest that we make a demand of 40 cents a barrel for the first year. In the past six months production has been at top notch. Unless some new field is opened within ninety days the marketing companies will have to draw on their stocks. In a year from today oil will command two times what it draws today. The conditions are now the same as they were at the time oil jumped from 30 to 60 cents.

"Let me have ten days and see if I can sell our oil for better than 35 cents and close up the first year for 40 cents. It is possible that a demand will be made for oil at the second year at 50 cents and the third year for 60 cents.

"There is already a request for 10,000,000 barrels of oil to supply steamships when the Panama canal opens. I believe that we can get 40 cents and possibly better."

Col. Spellacy was given the power to negotiate for the sale of the Association's oil on the terms he stated.

Lowes Capital

Kern River Oilfields, Ltd., has lowered its capital from £1,350,000, or approximately \$6,750,000, to £597,192, or approximately \$2,985,860. The par value of the shares, too, has been changed from £1 each to 10 s. each. The step has been taken to make the capital more nearly accord with the value and the dividend paying possibilities of the properties of the company and is to be commended as a step in the right direction.

Final Payment on Coalinga Properties

The final payment of \$150,000 on the Empire, De Luxe and Republic oil companies in the Coalinga field, purchased about a year ago by English interests represented by W. P. Hammon, has been made and disbursed to the shareholders of the three companies. The same interests have also secured 160 acres of undeveloped land in the same field from the Coalinga Central Oil Company.

Another Consolidation

A consolidation of no little moment is that whereby the Oil Producers & Refiners Company, a British controlled corporation, takes over the properties of the North American Oil Consolidated Company, the United Oil Company and the Section Two Syndicate, the total production of the Oil Producers & Refiners Co. being brought up to 15,000 barrels daily by these acquisitions. Other property owned by this company is the Graciosa Oil Company and the Port Harford refinery. If we are not mistaken the main office of this concern is on Pine street, San Francisco. It is stated by a number of papers that the purchase will be made on a half-cash-stock-and-bond basis. We have no first hand information on this deal.

Recent Research Work and Publications of the United States Geological Survey and Bureau of Mines

Review of the Thirty-Third Annual Report of the Director of the United States Geological Survey

In his report for the year 1912, Dr. George Otis Smith, director of the geological survey says: "The appropriations for the work of the United States geological survey for the fiscal year 1911-1912 comprised items amounting to \$1,507,920. The plan of operation was approved by the secretary of the interior and a detailed statement of the work of the several branches and divisions of the survey is presented on later pages of this report."

Director Smith then proceeded to recite the need of a survey building because of the fact that the offices are crowded, there is a lack of fresh air and light, resulting in at the least an impairment of the efficiency of the survey employees; also, the offices are tremendously hot in summer; there is likewise a fire risk that is very objectionable inasmuch as the survey has the finest collection of geologic literature in the world.

The director continues that great inconvenience is due to lack of proper space, that the building is so located that its occupants suffer much from the dirt and noise from without, as well as within (due to the crowded condition of the building), that greater efficiency would result from new housing of the employees of the survey and that the present quarters are entirely unworthy of the nation. After the "kick" against the present quarters Director Smith notes the progress of scientific work. Mention is especially made of the paleontologic work accomplished by survey members of recent date; of work on geological folios, work in land classification, work on oil and gas, theoretic work by survey geologists and the educational work. Quite a lengthy discussion is given the "Land Classification Policy," which will, of course, command a great deal of attention at this time, coming as it does, from this source. The report concluded with the statement that "there was a notable increase in the amount of work done by the field service" which * * * "involved a large increase in the work of the Washington office." The work of the survey, Dr. Smith concludes, "finds public expression chiefly through its printed reports and maps, which are published in editions adapted to meet the demand. During the fiscal year ended June 30, 1912, the number of reports printed (437,501) corresponded very closely to the number distributed (437,637). The reports are sent out only on application."

Bulletin On Fuel Values

The final bulletin on "Comparative Fuel Values of Gasoline and Denatured Alcohol in Internal-Combustion Engines" giving the results of more than 2000 tests, has just been issued by the United States Bureau of Mines. The conclusion reached by the authors, Messrs. R. M. Strong and Lauson Stone, is that "in general the alcohol engine is, or can be so designed and constructed as to be equal to the gasoline engine in adaptability to service." Copies of the bulletin may be obtained by writing the Bureau of Mines at Washington, D. C.

Methods of Determining the Sulphur Content of Fuels, Especially Petroleum Products

Technical paper 26, of the U. S. Bureau of Mines, relates to methods of determining the sulphur content of fuels, "especially petroleum products." The paper comes as an answer to the great number of inquiries directed to the Bureau of Mines regarding methods for the determination of the sulphur content of fuel oils and petroleum products; the aim of the paper is set forth by the authors as being "to tell how the products of petroleum can be improved in quality, how they can be more efficiently utilized and how some materials now regarded as waste products can be made useful." That is, this one paper is a chapter in a series which will really describe in detail the petroleum industry as carried on in the United States when the entire series has been written. The authors of this paper state that "The corrosive action of sulphur acids on fireboxes and boiler flues and on the cylinders of internal-combustion engines is not thoroughly understood. The effects of such action are sufficiently evidenced by the pittings, scales, and roughened spots on metal surfaces that have been exposed to the products of combustion of fuels rich in sulphur. Therefore an exact knowledge of the sulphur content of fuels is desirable."

Continuing, the authors (I. C. Allen and I. W. Robertson),

go on to say: "The methods for the quantitative determination of sulphur in fuels, especially petroleum products, may be classified as follows: 1.—Dry fusion with alkalis and subsequent oxidation with bromine. 2.—Dry fusion with a mixture of alkalis and oxidizing agents. 3.—Treatment with wet alkalis and oxidizing agents. 4.—Oxidizing with fuming nitric acid at high pressures. 5.—Burning in pure oxygen at atmospheric pressure. 6.—Burning in a stream of pure oxygen. 7.—Burning in a lamp in atmospheric oxygen. 8.—Burning in a bomb calorimeter with pure oxygen under a pressure of 30 to 40 atmospheres. In this paper, methods for the determination of sulphur in fuels are taken up in the order stated above; a discussion of each method and observation on its value are given, and a bibliography of pertinent literature is presented. The paper may be procured by writing the Director of the Bureau of Mines, Washington.

Immense Mineral Production

The mineral output of our country for 1911 was the third largest in history, reaching the huge figure of \$1,918,184,348. The metal value of this total was \$672,179,600; coal leading with a value of \$626,366,876; pig iron was second, with a value of \$327,334,624; clay products third, \$162,236,181; copper fourth \$137,154,092; and petroleum fifth, \$134,044,752. Petroleum increased more than \$6,000,000 over 1910. The figures taken from an advance chapter from "Mineral Resources of the United States" for 1911, a discussion by W. H. Thom, of the survey. This chapter may be procured by writing the geological survey at Washington.

The Production of Natural Gas in 1911—Facts, Figures and Quotations from Dr. David T. Day's Natural Gas Report

According to the excellent report of Dr. David T. Day, the value of the natural gas produced in this country in 1911 was \$73,000,000. This was about \$4,000,000 greater value than the larger gas production of the previous year. The demand for natural gas, Dr. Day says, makes the limited supply a matter "of growing seriousness." The yield in Ohio and Indiana decreased so rapidly during 1911 that the investment of capital to increase production was stopped. Pennsylvania was the greatest consumer of the product, using 154 billion feet, followed by Ohio, West Virginia and Kansas. Dr. Day's report gives the number of wells in the various states and the total for the entire country, which is 28,428. He devotes considerable time and attention to the separation of gasoline from natural gas, the industry that has made such rapid strides in California this past year, and gives figures on the production of this kind of gasoline and value thereof; the production he places at 7,425,839 gallons, the value of which is computed as \$531,704. The Derrick does not hesitate at all in stating its belief that when the natural gas industry for 1912 is reported, and when the amazing growth of the gasoline-from-gas business in California during 1912 becomes known, that it will cause an immense stir. This business has shown a growth during this past year, in this state, nothing short of phenomenal. This is, of course, due to the immense quantities of the proper gas for treatment, the high price of the gasoline when obtained and the big demand for it. The business is growing by leaps and bounds. To return to Dr. Day's report:—Considerable space is devoted to California and we don't believe we can do better than give Dr. Day's report, which follows in full:

"Natural Gas In California In 1911."

"As indicated in the report for 1910, the development of natural gas in several localities in California, especially in the Buena Vista Hills, has proceeded rapidly in the hands of large corporations, resulting in a supply of natural gas to the town of Bakersfield and to other points in the San Joaquin Valley, with the prospect of ultimate extension to Los Angeles. During the year, several gas wells, among them perhaps the largest ever drilled in the United States, were opened with convincing evidence from the pressure and the thickness of the sands of an adequate supply justifying large development.

"The estimated value of natural gas consumed in California in 1911 was \$800,714, as compared with \$476,697 in 1910, a gain of \$324,017, or nearly 70 per cent, it being the greatest year in the history of the natural-gas industry in this state. This was the result of increased production and distribution of gas to consumers from wells in the Midway field, pipe lines for which

were in course of construction in 1910. In the early part of 1911 Bakersfield was being supplied with gas from this field, in addition to Maricopa, Taft and Fellows, besides camps and drilling rigs in the Kern County oil fields. No new gas fields were opened in this state in 1911, but a total of 8 productive gas wells was completed, all of which were located in the Midway field, the number of gas wells in this field being 12 at the close of the year 1911. The indications are that there is a large quantity of gas now available and the probability of continued supply. It is reported that additional gas lines may be extended from this field, one of which will supply domestic consumers in Los Angeles and other towns adjacent.

"By referring to the table for distribution of gas in 1911, by states, it will be seen that the total distribution of gas to 10,598 domestic consumers in California was 543,392,000 cubic feet, valued at \$317,467 as against 245,738,000 cubic feet of gas, valued at \$194,631, supplied to 8292 domestic consumers in 1910. The quantity and value of the gas supplied for industrial pur-

poses in this state in 1911 was estimated to be 5,846,428,000 cubic feet valued at \$483,247, which was principally consumed for power in the oil fields. However, considerable quantities of gas are daily wasted, and for the purpose of utilizing this surplus gas some plants for the production of gasoline are being installed in the oil fields of Brea Canyon, Puente, and Santa Maria.

"The principal towns supplied with gas in California are as follows: Stockton, with gas from San Joaquin County; Sacramento, with gas from Sacramento County; Ventura, Oxnard, and Santa Paula, with gas from Ventura County; Susan City, Fairfield, and Cement, with gas from Solano County; Santa Maria, Guadalupe, and Betteravia, with gas from Santa Barbara County; and Bakersfield, Maricopa, Taft, and Fellows, with gas from Kern County.

The total number of wells from which gas was being used at the close of 1911 was 60 as compared with 54 at the close of 1910. During the year 8 productive gas wells were drilled and 6 dry holes and 2 gas wells were abandoned."

The General Petroleum-Union Deal

The apparently established facts in the deal whereby the General Petroleum Company, the great San Francisco corporation controlled by the Barneson-De Sabla interests, acquires control of the Union Oil Company of California, are as follows:

The General Petroleum Company has paid to Robert Watchorn, treasurer of the Union Oil Company and holder of the option on the Union control, the sum of \$500,000. Robert Watchorn holds the control of Union Oil through his option on the Stewart holdings of the stocks of the Union Provident and United Petroleum companies; these stocks holding \$16,000,000 out of \$30,000,000 of the issued stock of the Union Oil Company.

The General Petroleum Company has obligated itself to purchase every share of Union Provident, whether held by the Stewarts or not, at \$130 gross, thus protecting minority shareholders in the Union Provident.

It is stipulated that the personnel of the Union Oil Company remain unchanged.

It is also stipulated that the past policy of the Union be adhered to by the new owners.

The arrangement for payments on the purchase is stated to be as follows: The next payment will fall due on April 1st, and will call for \$100,000. Thereafter \$100,000 payments every three months are due to be made by the General Petroleum company until \$1,000,000 has been turned over to Mr. Watchorn, at which time the balance of \$19,000,000 is to be paid him in a lump sum, in default of which Mr. Watchorn will become owner of all moneys paid in and will again assume possession of the option on the control of the Union. In the event of the sale Mr. Watchorn is to receive \$1,000,000. Another version of the "inside" details of the deal is that the General Petroleum Company will have until Jan. 1, 1915, to complete payment; a much more credible version it is too.

The reason for the sale of the Stewart's controlling interest, which they hold through Union Provident is the age of both President Lyman Stewart, who has reached his 72nd year, and of his brother, Mr. Milton Stewart, who is 74 years old.

The Stewarts have not sold their holdings in the Union Oil Company proper, but only their Union Provident and United Petroleum shares. The gross price to shareholders in Union Provident and United Petroleum will be \$130 per share; the net price, after deducting costs of sale, between \$122.50 and \$125.

Robert Watchorn has written a letter to Pres. Lyman Stewart that the purchase is made by the General Petroleum Co. "on and in behalf of itself and a coterie of independent financiers and is not allied with any other corporation," which excludes both the Standard Oil Company and the Shell-Royal Dutch combine or a subsidiary of the latter.

President D. G. Schofield of the Standard Oil Company, has totally denied any connection on the part of the Standard with the purchase.

Finally, the deal, when consummated, if it is consummated, places the General Petroleum company in the front rank of the great oil corporations of the world, for, besides being a very large corporation with extremely valuable holdings, and in con-

trol of the General Pipe Line Company, by this purchase it will come into control of the following properties, subsidiary companies now owned and controlled by the Union Oil Company: Oil lands in fee simple, 2249 acres; mineral rights on oil lands, covering 132,249 1-2 acres; leases on oil lands covering 45,189 acres; mineral locations covering 16,801 acres and refineries at Rodeo and Oil Center as well as a great system of pipe lines and an established trade all over the Pacific Coast. Also the control of the following corporations: Mission Transportation & Refining Co., Union Transportation Co., Mission Transfer Co., Newlove Oil Co., Santa Maria Oil & Gas Co., Claremont Oil Co., Calif.-Coast Oil Co., Pitcher & Garbutt Oil Co., John Irwin Oil Co., Old Keystone Oil Co., Pioneer Pipe Line Co., Union Steamship Co., Los Angeles Oil Co., Union Well Supply Co., Union Tool Co., Kaiser Oil Co., Outer Harbor Dock & Wharf Producers' Transportation Co., Pectan Steamship Co., Lake View Oil Co., and virtual control of the Independent Oil Producers Agency, which is counted by the buyers as by no means one of the least advantages that go with the purchase of the Union. The above list of properties owned and controlled by the Union can by no means be regarded as authentic, as it represents (probably imperfectly) the holdings of the company on January 31, 1912, and changes have taken place since that time, but it is the best approximate we can give at present.

As a matter of course this deal has evoked a great deal of discussion and the press has been filled with charges and counter charges, allegations, cries of unfairness, praise and condemnation. Statements have been made that the sale was forced, or practically so. Some of the allegations are that the Union has thousands of acres of land under lease which it is necessary to drill within a short time in order to prevent forfeiture. Another statement is to the effect that of the \$25,000,000 bond issue voted last year the \$5,000,000 realized from the sale of that amount of the bonds has already been spent and the company was unable to raise further money on bonds at the present time and so turned its energies to the sale of the control.

The resignation of J. S. Torrance from the board of directors of the Union Oil Company and its affiliation, claiming that the minority shareholders had not been protected in the sale of control, injected considerable bitterness into the deal. Union Oil has gone down in value on the exchange from \$100 to around \$90, showing a lack of confidence, but United Petroleum and Union Provident shares have advanced.

It is said that the General Petroleum will make the payments upon the Union through the sale of its securities, which consist of both stock in the General Petroleum and of its bonds.

It might be added that the excellent reputation of the De Sabla-Barneson interests would seem to guarantee to all shareholders of the Union the fairest kind of treatment, fully as honorable and from a management in all ways as competent and reliable as that which is now selling the controlling interest. Mr. Robert Watchorn, in a statement in the press virtually says this is the case. As far as the effect of this transfer of interests on the Independent Agency is concerned, it will in all probability not be noticeable until after Jan. 1, 1915; and as that date is quite remote, it seems needless to speculate on the same at this time.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Proud of California Railroad Service

Mr. Salisbury Details Some Interesting Facts

Having just completed a round trip to New York City from Coalinga your correspondent feels genuine pride in stating that the Southern Pacific system of trains and service is recognized as superior to many of the railroads in the south and in the east. Our party met a number of travelers on this trip and were informed that the Southern Pacific train service was far superior to many another; that the dining car service was equal to and superior to that of many other roads, and our experience over the Sunset Route to New Orleans and on the Overland Limited from Omaha to San Francisco, demonstrated to us that the train service, the diner service and prices, and the courtesy of train men were equal to any and far superior to many of the several roads we traveled over. On leaving the Pennsylvania Station in New York City on Tuesday at 2:06 p. m., we were informed that we were due to arrive in San Francisco on the following Saturday at 2:10; and we arrived exactly to the minute.

The Southern Pacific are building a double track through the Sierras to meet the increase of business and to prepare for the travel of 1915 and the future. The new track does not parallel the old road all the way; where possible the grade is improved. We were informed by train men that there had been no fires in the snow sheds since the installation of fuel oil burners in the engines; forest fires are now the only fire element that has to be watched. Fire alarm stations are placed at convenient points along the railroad over the mountains. The road is well ballasted, the train moves smoothly over the rails, the observation car is provided with all the latest magazines and the gentlemen's smoking room is well equipped and adds comfort to the trip. The change of cars at Chicago, over the C. M. & St. Paul, for Omaha, is made at the same depot and makes it very convenient for all travelers. The spirit of 1915 is invading the east; everyone is talking about the Exposition and an unprecedented traffic may well be expected.

Burke vs. S. P. Expected n December

The suit of Edmund Burke, et al., vs. Southern Pacific, et al., having been certified to the United States Supreme Court from the Appellate Court, sitting in San Francisco early in the year, will come on for hearing in the United States Supreme Court during December. Frederick B. Kellogg, of New York City, and Solicitor General Bullett, with Edmund Burke, will present the case to the Court. Edmund Burke, et al., filed on land in this district and claimed under a United States Patent by the Southern Pacific; the filings were made in March 1909; assessment work has been done each year by Burke. Burke attacks the validity of the railroad title to the oil lands under dispute.

Kern Trading & Oil Co.

The Kern Trading and Oil Company, section 7-21-15, well No. 1 is 2,785 feet deep, 10 inch casing; formation blue shale, indications favorable for a well. The Canadian Coalinga well on section 3-21-15, the pioneer well south of Wartham Creek, came in at 2,839 feet, 8 1/4 inch casing. The K. T. & O. Co.'s well is up on the formation about 500 feet, which would make a little difference in depth; the hole is in first class condition. The company is building derricks and rigs on the east line of section 35-19-15 for wells No. 21, 29, 30 and 31; these will offset the Standard's Sonntag wells on section 36-19-15. Well No. 10 has been completed and will soon be on the beam. The

development work on the east side fields is steadily forging ahead and the new wells are above the average.

Pluto Oil Company

The Pluto Oil Company, section 19-25-19. The company has installed a new 70 horse power boiler, has put in a new 3500 foot cable, and is now drilling. Mark Berry is superintendent and driller. The hole is 3232 feet deep, 6 1/4 inch casing, pipe free; will shut off water with this string of 6 1/4. The present formation is hard sand.

Dominion Oil Company

The Dominion Oil Company, section 7-23-17, Kings County, well No. 1 is 3090 feet deep; formation hard sand. Superintendent Warner has put in a new 4000 foot cable and a new string of tools. The formation indications are favorable for a well. The drilling has been hard. They are now nearly through the heavy cap rock.

Coalinga Royal Oil Company

The Coalinga Royal Oil Company, section 8-19-15, well No. 1 has been cemented at 1990 feet, 8 1/4 inch casing, in an 8 foot shell. To shut off water; reported a "good job." The well will be drilled into the sand early this month. Indications for a well are reported as favorable.

Progressive Oil Company

The Progressive Oil Company of Coalinga are drilling in their No. 1 well in the southwest quarter of section 34-20-14; are now nearly 400 feet deep with 10 inch casing.

The California Oilfields, Limited, have completed derricks and rigs for several wells on section 34-19-15.

Development of Export Trade in California Drilling Tools and Equipment

By Guy H. Salisbury

The history of the development of the export trade in California oil well drilling tools and equipment is of interest at this time because this development has carried the name of California into many parts of the world, until today the California oil well tools are recognized as among the best known and lead in the export trade of oil well supplies. The man who has led in this work is Captain J. F. Lucey, to whose energy and skill in organizing, the development of the firm of "J. F. Lucey Company" and the "J. F. Lucey-Gillispie Company, Limited," is due. Early in 1905 Captain J. F. Lucey took up the work of handling an oil well tool business in the Coalinga, California, oil field, as manager of the Bunting Iron Works. The making and repairing of the various kinds of tools used in the Coalinga district gives an unparalleled opportunity to learn the necessities of the oil well supply trade. Captain Lucey availed himself of his opportunities to the fullest degree, studying the requirements of the driller by watching the actual work of the tools in the field and striving constantly to improve over the old methods. The result is seen in the world wide market, created by Captain Lucey, for California equipment.

As a field of action, Coalinga soon became too small for a man of the ability, insight and business aggressiveness of Captain Lucey. Oil men—operators, managers and drillers, alike—were vitally interested at this time (as now) in the making of more and more efficient tools. The incorporation, then, of the

J. F. Lucey Company, came as a natural result of this demand. It was a house destined to grow "by leaps and bounds," for today the firm of "J. F. Lucey Company" has three departments: The first, with offices at 50 church St., New York City, controls the American—the parent—interests, and here is handled the entire export business of the corporation; the second division, with offices in London, England, is represented by the J. F. Lucey-Gillespie Company, Ltd., which handles the company's business in England, Scotland, Australia, East India, Roumania, India, Prussia, Russia and Nigeria, on the west coast of Africa; the third division is the J. F. Lucey Company at Tampico, Mexico, handling the business of Mexico.

It is acknowledged now that operations conducted with American tools and methods in Russia were not satisfactory to the operators there until the advent of the rotary method of drilling, when success was achieved. Success meant further adoption of the American tools and the result is the Lucey-

Gillespie Company have shipped into Russia a number of heavy Parker Mogul Rotary outfits, which have given eminent satisfaction.

The New York Office of the Lucey Company handles direct a large business with New Zealand, West India and South America. The company has confined itself exclusively to the exporting of California tools and equipment, which have proven far superior to the tools and light equipment formerly shipped to the foreign trade. The company maintains the policy suggested in its motto "The Name is a Guarantee" for quality of material and fair business methods. Today the company is the largest single exporting corporation of oil well supplies, tools and equipment in New York City, and Coalinga is justly proud of the fact that the company "got its start" in this field, and that the California oil well tools are being known and recognized throughout the world where the oil industry is thriving.

The West Side Fields

Editor's Note:—(The news following is, in the main, gleaned from our excellent contemporary, The Midway Driller, the weekly newspaper published at Taft, in the heart of the Midway fields. The "Driller" is widely known as a newspaper

which can be relied upon, because it takes the trouble to verify its news. We make this acknowledgement as a matter of courtesy and appreciation, with the one desire of giving credit where credit is due.)

The Pacific Crude Oil Company on section 32-31-23, has contracted for a Tumble refining plant.

A lease from E. B. King to Ernest V. Benjamin, covering 180 acres in section 16-32-24, has been recorded. It runs for two years from November 26th last, on a one-fifth royalty, and embraces an option to buy the property at \$2000 per acre. The land is the west half of the southwest quarter of the section.

A decree of foreclosure has been entered in the case of John Conley and D. H. Evinger vs. the Babcock Oil Company. The court has ordered a judgment of \$39,900.25 and, it being a lien upon the southwest quarter of the southeast quarter of section 23-32-23, a commissioner has been appointed under a bond of \$5000 with authority to sell the property to satisfy the claims of the plaintiff.

The Adeline Consolidated Road Oil Company has received a federal patent to lots 1 and 2, southwest quarter of section 3-11-24. The company has deeded to Wesley Clark and John Barneson the east half of the southeast quarter of the northeast quarter of the northeast quarter, section 3-11-14.

The Monte Cristo Oil Company is about to install a refining plant on its Sunset property. The company already has a plant in Kern River. Both plants are to use the Stone refining process.

The Associated Oil Company recently suffered the loss of an immense warehouse on its property on section 31-31-23, Midway, the total loss in money approximating \$75,000. The building was used to store equipment and well supplies.

The Standard Oil Company obtained a very large gas well shortly after the middle of last month. The well is located on 16-32-24 and is known as "Derby No. 2." The California Natural Gas Company has laid a 4 inch line to the new well.

It is said that the Midway Gas Company will not lay a

second pipe line for gas transportation to Los Angeles, as was originally planned. The first, a 12 inch main, has been completed some time, but the gas is not yet being used in Los Angeles, as there is a tall wrangle on regarding the rates to be charged; at least the rate war was on at last advices. The second pipe line was to have been the largest of the two, a 16 inch main, and its construction cost would be \$2,000,000.

Midway Concentrates

Well 24 on the Bear Creek Property of the General Petroleum Company, section 14-31-22, is completed and making 200 barrels per day. Pacific Crude's big gusher, section 32-31-23, sanded up, is about to be cleaned out and put on production again. Oakland midway well No. 3, section 14-31-22, has landed 10 inch casing at 1510 feet. Dome well No. 8, section 23-31-22, is down 1100 feet. Brookshire well No. 7, section 24-31-22, went into good oil sand at 2740 feet. Pyramid's No. 2 on section 26-31-22, down 1650 feet. Standard No. 1, section 28-31-23, down 3000 feet. Associated No. 2, section 32-31-23, down 3250 feet and looks like good well. Midway fields, 4-11-23, down 2100 feet. Canadian Pacific well No. 1 is being cleaned out; was brought in June 1911, and has produced \$80,000 worth of oil. Halé McLeod Oil Co. has declared dividend of \$14.157, or 1 per cent per share. Empire Gas & Fuel Co., section 15-32-23, drilling at about 900 feet. General Petroleum well on 22-32-24 has been perforated and looks like big producer. Boston Pacific's No. 1, section 32-31-24, is again flowing, making 1200 barrels of 25.7 degrees gravity oil daily. Buick 5, section 32-31-23, has passed through first oil sand at 3190 feet; 6 inch casing landed at 3265; going down with Standard tools. Dunlap No. 6, section 26-32-23, completed at 1055 feet making 125 barrels daily.

MULCH

Is the name given to the worthless product that troubles some oil wells. Some oil news suffers from a similar complaint. There's no "mulch" in the oil news of the

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Oil Gas"

TAFT, CALIFORNIA

Interesting Events in Santa Maria and the Southern Fields.

SANTA MARIA

Western Union Oil Company's Splendid Wells

Western Union Oil Company's well No. 48, in the Santa Maria oil field, is making 100 barrels daily of 35 deg. gravity oil. This oil is considered the best of any in the field. Well No. 50 of the same company is making about 200 barrels daily of 31 deg. gravity oil.

"Wildcatting" Near Fuglers Point

The Kern River Oilfields, Limited, is about to drill its first well in the neighborhood of Fugler's Point, near the Bradley canyon well. It is said that the Fugler's Ranch Oil Co., which began active drilling operations, is making excellent time.

Progress in Union's "Bell 5."

A fishing job is now in progress in "Bell 5" of the Union Oil Co., the famous well that came in at 2500 barrels per day and has made over a half million barrels of high grade oil in six months. When the job is completed, the well, which has a record for "sanding" often, will be cleaned out thoroughly and put back on the producing list. The well has been a little bonanza to the Union Oil Company.

Pinal Dome Strike

An alleged strike by the above company is reported from Santa Maria. Report places scene of strike as eight miles removed from any present development. The location is on the "Tonicini" ranch. A gassy tar sand, producing a very small flow of 8 gravity oil, has been entered. The company has another well in a new district separated by a mile from that producing 8 gravity, which it is stated has entered a sand bearing 20 gravity. We have not yet verified this information.

Santa Maria Oilfields, Ltd., Refinery

The above company has now completed the installation of a Trumble refining plant capable of caring for 6000 barrels at a time. The "Trumble" system has been very successful in the west side fields, and the Oilfields Limited anticipates equally good results. The company has constructed underground storage of reinforced concrete for 6000 barrels of roadoil and liquid asphalt. The storage tanks are so placed that their product can be run by gravity directly from the tanks into the tank cars for shipment.

Rich Strike by Rice Ranch

By deepening well No. 5 the Rice Ranch Oil Company got a splendid producer, the well now making about 275 barrels per day. As a result the company is now deepening other holes and drilling two new wells.

Union Will Install Gas Compressors

A report that the Union Oil Company is to install a heavy battery of gasoline-from-gas compressors in Santa Maria, received confirmation through the appearance of agents of the Bessemer Gas Engine Co., of Grove City, Pa., upon the Union's Santa Maria property. The Union's present plant is manufacturing something in excess of 1100 gallons of gasoline per day. The Union has an output of 14,000,000 c. f. of gas daily. The product is well saturated. An option on the gas after extraction of the gasoline is held by the Los Angeles Gas & Electric Company.

SOUTHERN NOTES

Well No. 1 of the Kansas Crude Oil Co. in the Salt Lake field is now making 75 barrels daily. No. 2 is being re-cemented. No. 3 is down about 1500 feet.

The gasoline plant on the A. F. Gilmore property, Salt Lake, is extracting about 700 gallons daily.

Rancho La Brea Oil Co. is abandoning several old wells and moving the derricks to new locations, where wells will be drilled.

It is reported that the dearth of results in the Standard's set the wells in La Habra Valley is causing that company to abandon 10 has been.

Union Oil Co.'s well 3, on Graham & Loftus lease in La Brea, has been brought in at 3370 feet with the initial yield at 100 barrels of close to 17 gravity oil per acre oil was expected.

has created much interest has been made in the county, near Santa Susanna, in a well of the Mutual Oil Co., which went into

an oil sand at 500 feet, the oil being 36 degrees in gravity. Forty barrels, it is alleged, was pumped from the well before the same was shut in. It has not since been opened. This is "wildcat" territory and as a result has created intense interest.

Briefs

(NOTE:—These items were held over from last month, but are of the same value nevertheless—Editor.)

The Mutual Oil Co.'s well in the Little Sespe is making 100 barrels of 34 gravity oil daily. Oil all contracted for at \$1.10 per barrel.

Bradley Canyon Oil Co., Muscio tract, Santa Maria, will soon resume operations. Anaconda Oil Co. has new well in Little Sespe, gravity 33, production about 40 barrels.

Reward Oil Co., suing Associated for breach of contract; amount involved \$49,000.

The Parity Gasoline Co., in the Santa Maria field, has completed the erection of another Bessemer gasoline-from-gas compressing plant. They are using the gas from wells on the property of the Rice Ranch Oil Co., where the plant is located.

Guaranty Oil Reorganizes

A reorganization of the Guaranty Oil Company has been effected whereby the name has been changed to the Maricopa, Ventura and Los Angeles Pipe Line Company. The new organization is presided over by the following officers and directors: President, C. W. Roberts; Vice-presidents, R. L. Cox and Warren Gillilen; Treasurer, J. W. Kays; Secretary, Wm. K. Weaver. The new company is much better fixed financially than was the Guaranty, funds being available to complete the line from Maricopa to Ventura, according to credible advices.

Geologists and the Southern Pacific Case

In the trial of the case of the United States government vs. the Southern Pacific Company, in progress in Los Angeles the early part of December, witnesses for the Southern Pacific made light of the statements and testimony of the government's witnesses, the main contention of the railroad's witnesses being that geologists can't tell the depth nor presence of oil and that the drill is the only sure test by which to prove what is under the surface. The point which the government is trying to establish is that the railroad knew the Elk Hills to be oil bearing when taking out a patent under an agricultural grant. By placing witnesses on the stand who have helped make the oil history of the West Side fields, and who recollect the opinions previous to the development of the Elk hills as an oil district, the Southern Pacific expects to show that the government's contentions that it secured the Elk hills through "fraud and misrepresentation" is not founded in fact.

Probable Consolidation

It is reported that the Traders Oil Company and the Traffic Oil Company, which are controlled by the same people, will merge their interests. The Traders own some valuable properties in the Coalunga and Midway districts, and have an output of 70,000 barrels a month. The Traffic is operating in the Midway and in the Kern River fields with a considerable smaller production.—Oil Reporter.

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THE STOCK MARKET

Latest Quotations On the San Francisco Exchange

The market for oil stocks continues quiet, with trading restricted, in the main, to the stocks of the larger corporations. During the week prior to our going to press there was small trading. Associated has been "dumped on the market" quite heavily of late, and the price has suffered in consequence. Amalgamated, Sauer Dough, West Coast, Western Union, Caribou, Lucile and New Pennsylvania have met with considerable demand in San Francisco during the month past. While not listed, General Petroleum shares have commanded a great deal of attention; since the Union Provident deal came into prominence General Petroleum has been very lively, the shares advancing from \$17.00 to \$39.00 in short order. Following is a list of recent quotations on the San Francisco exchange:

COMPANY	BID	ASKED
Amalgamated Oil	80 00	.....
Associated Oil Stock	43 00	43 50
Bay City .....	.....	70
Caribou .....	.....	1 00
Claremont .....	.....	60
Coalinga Central	20	.....
Coalinga Mohawk .....	.....	1 00
De Luxe	60	.....
Empire	35	.....
Maricopa 36	32	.....
Monte Cristo .....	.....	90
New Penn. Petroleum .....	.....	55
Palmer	18	.....
Republic	15	.....
Silver Tip	40	.....
S. W. & B.	15	.....
Turner	80	.....
West Coast (pref.)	90 00	.....
W. K. Oil Co.	1 85	.....

Los Angeles Quotations

Los Angeles continues livelier than San Francisco in the purchase and sale of stocks. The feature of the last few weeks, of course, is the changed positions and trading in Union Oil, Union Provident and United Petroleum. Union has sunk to \$90.00, while Union Provident and United Petroleum both command around \$106-107. Amalgamated is lower than thirty days back by some 2 1-2 points. Comment on the situation seems superfluous when the quotations are at hand:

COMPANY	BID	ASKED
Amalgamated Oil	82 37 1/2	82 62 1/2
American Crude Oil Co. ....	.....	30
American Pet. Co. (pfd.)	70 00	75 00
American Pet. Co., (com.)	49 00	53 00
Associated Oil	43 00	43 62 1/2
Bear Creek Oil & M. Co.	60	.....
Brookshire Oil .....	.....	60
Calif. Midway Oil Co.	09	.....
Central	1 10	1 30
Continental Oil .....	.....	35
Enos Oil Co.	04	07
Euclid Oil Co. ....	.....	35
Fullerton Oil	2 25	4 50
Globe	02	05 1/2
Jade Oil Co.	07 1/2	09 1/2
Maricopa Northern .....	.....	06 1/2
Maricopa Queen Oil Co. ....	.....	30
Mascot Oil Co. ....	.....	75
Mexican Pet. Ltd. (pfd)	101 50	103 00
Mexican Pet. Ltd. (com.)	82 00	.....
Midway Northern .....	.....	25
National Pacific Oil Co.	02 3/4	02 5/8
New Penn. Pet. Co.	51	.....
Olinda Land Co. (Oil)	38 5/8	39 1/2
Palmer Oil Co. ....	.....	20
Penn. Midway Oil Co.	07 1/2	.....
Piru Oil & L. Co.	25	.....
Rice Ranch Oil Co.	1 15	1 22 1/2
Trader's Oil Co.	67 00	71 00
Union	90 00	91 00

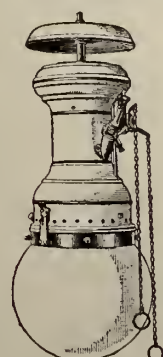
Union Provident Co.	106 87 1/2	107 12 1/2
United Petroleum	106 50	107 90
United Oil Co.	34 3/4	36
West Coast Oil (pfd)	70 00	.....
Western Union	60 00	100 00
White Star Oil Co.	10	.....

Dividends for November

Less money was paid out in dividends during November than October, due to the discontinuance of payments by a number of low gravity oil producing companies and to the fact that there were no quarterly disbursements paid in November. As a result of the sale of the Empire and Republic companies both made large distributions, the Empire paying \$80,000 and the Republic \$60,000. Other regular payers brought the total dividends of the California companies to \$673,448.67. The payment by Mexican Petroleum Ltd., pfd., and common, of \$400,000, brings the total disbursements by California owned and controlled oil corporations to over a million. The following list shows the companies paying and sums paid:

COMPANY	Per Shr.	Total
Amalgamated	\$1 00	\$ 50,000 00
American Pet. (pfd)	005	8,750 00
American Pet. com.)	00 1-3	39,607 00
Caribou	00 1-3	8,070 00
Central	0075	7,500 00
Claremont	01	5,000 00
Del Rey	005	3,927 95
Empire	40	80,000 00
Home	01	5,000 00
Monte Cristo	025	12,500 00
Mount Diablo	015	7,500 00
New Pennsylvania	005	5,000 00
Paraffine	01	3,000 00
Record	01	5,000 00
Republic	12	60,000 00
S. F. & McKittrick	01	5,000 00
Sauer Dough	0075	2,992 50
Section Twenty-five	50	20,000 00
State consolidated	01	5,000 00
Traders	006	9,000 00
Union Oil	006	194,743 60
Union Provident	06	91,402 02
United Petroleum	006	48,450 60
W. K.	02	10,000 00
Western Union	005	5,000 00

Total Cal. companies	\$ 673,448 67
Mex. Pet. Ltd., (pfd)	00 2-3 80,000 00
Mex. Pet. Ltd., (com.)	001 320,000 00
Grand total	\$1,073,448 67



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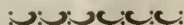
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Nineteen Twelve---The Annual Review

The Production, Consumption, Operation Statistics and Surplus of the Greatest Year in the History of the California Oil Industry

(By C. Carroll Wright)

A total production of more than ninety million barrels, a total consumption of more than eighty-three million barrels and a surplus of but seven and forty-three hundredths per cent of the total production or of less than six and three-quarters million out of more than ninety million barrels of oil, is the remarkable record of production, consumption and surplus in 1912 in California; the biggest year the oil industry of this state has yet known, and a year which once again demonstrated California's premier position among the oil producing countries of the world.

The visible supply of oil (storage) on December 31, 1912, was 46,698,054 barrels, or sufficient to last 186 days at the rate of consumption prevailing on that date. Also, for the first time since February, 1910, oil was drawn from storage during December, 1912, due to the shut down of the low gravity producers, affecting 1147 wells.

The gain in the percentage of oil marketed in 1912 over the same percentages in the years 1910 and 1911, has been marked, while the drop in the percentage of oil going into storage in the three years has decreased in ratio to the sales percentage increase. The best manner in which to show the gain in the market and the corresponding gain in the percentage of oil sold out of the total amount, is a table covering the production, consumption and storage figures for the past three years and the relative percentages. This table reads as follows:

Total Production, Consumption and Storage, Years, 1910, 1911, and 1912

	1910
Total Production	77,697,586 bbls.
Total Consumption	66,172,373 bbls.
Total surplus	11,525,213 bbls.
Percentage of oil consumed	85.16 per cent.
Percentage of oil stored	14.84 per cent.

	1911
Total production	83,744,044 bbls.
Total consumption	72,960,371 bbls.
Total surplus	10,983,673 bbls.
Percentage of oil consumed.....	87.09 per cent.
Percentage of oil stored.....	12.91 per cent.

1912

Total production	90,074,439 bbls.
Total consumption	83,409,630 bbls.
Total surplus	6,664,809 bbls.
Percentage of oil consumed	92.60 per cent.
Percentage of oil stored	7.40 per cent.

Percentage Comparison

Year	Marketed	Stored
1910	85.16 per cent.	14.84 per cent.
1911	87.09 per cent.	12.91 per cent.
1912	92.60 per cent.	7.40 per cent.

From this table it will be seen that the surplus of oil going into storage in 1910 was 2.2 times greater than that of 1912, while the surplus for 1911 was 1.74 times greater than that of last year.

The production of 1912 shows an increase of 6,664,809 barrels over that of 1911, and of 12,376,853 barrels over the 1910 output. Consumption for 1912 increased 10,449,259 barrels over 1911 and 17,237,257 barrels over 1910. In other words, during three years CONSUMPTION HAS GAINED 4,860,404 barrels over production. It will be noted that the consumption for 1912 is but 334,414 barrels short of the production for 1911, which is in keeping with the past history of the industry in this state.

STATE-WIDE FIGURES

In the center of this number of the Derrick there is given a comparative table such as has never been presented by any publication, giving an insight into the production, consumption and surplus of oil in California during the past three years which should be of the utmost value to California producers, operators, consumers of fuel oil and foreign capital which has already invested money here or which may be contemplating investment in the California oil business. This table was compiled by Mr. Blythe H. Henderson and the writer, all of the percentages having been worked out by Mr. Henderson. The aim of the table, which is founded on figures given out by the Standard Oil Company of California, and published monthly in the "Derrick", is to give at a glance such an insight into the growth of the oil business and into the producing and field conditions as will enable those seriously interested in the business to gather a correct basis upon which to judge of actual conditions and so to speak, take stock of their interests. The pur-

pose of this review is to call to mind as many of the interesting facts as possible in a comprehensive manner, and to go a little more into detail than do the bare figures.

Wells Producing, Etc., During Past Three Years

December 31, 1910, there were 4692 wells producing. The average output per well per day for that month was 45.4 barrels. During the year 1019 wells were completed, the Lakeview and other great gushers among this number.

December 31, 1911, there were 5138 wells producing, making an average daily output per well during the month of December, of 46.8 barrels. During the year 800 new producers were brought in, many large wells among them.

December 31, 1912, there were 5626 wells producing, having a daily average output per well of 44.2 barrels. Completed during year, 769. As for the rest, 1147 producing wells having an estimated aggregate production of 26,830 barrels per day, were shut in during the last month of 1912. The daily average production of the 5626 wells producing amounted to 248,556 barrels, while the daily average consumption for the month of December totalled 250,042 barrels, so that oil was being drawn from stocks at the rate of 1486 barrels per day, while the 1142 wells shut down are estimated capable of producing 25,344 barrels over present consumption daily. In other words, through their having shut down, the producers of the lower gravity oils are forcing the marketers to draw on storage at the rate named, so that the daily consumption during December was six-tenths of one per cent. greater than the actual daily production.

The reason for this condition is that the Standard Oil Company, as the contracts ran out, discontinued the purchase of oil under eighteen degrees in gravity, affecting the estimated daily average production of 26,830 barrels, and the producers, having no market ready to hand, temporarily discontinued operations. How long this condition will obtain, in view of the steady increase in consumption, is left for the producers and others most interested to "figure" on. It appears however, that it will be but a short time until the necessity for oil makes itself so apparent that the marketers will be glad to get the lower grade oil with which to supply their contracts and will offer a price acceptable to the lower gravity producers than the one prevailing; 186 days' supply, even with the vast resources of California, is not an extraordinary amount when the present consumption of 250,042 barrels per day is considered.

A summing up of the present situation shows the following: At the end of 1912 there was an average daily production of 248,556 barrels; an average daily consumption of 250,042 barrels; 1147 idle wells capable of producing 26,830 barrels per day, and 46,698,054 barrels in storage, or 186 days' supply at the present rate of consumption. The average monthly production during the entire year totalled 7,506,203 barrels, leading consumption by 555,400 barrels per month. The fact that the 1147 wells of the low gravity producers are idle, cuts out the surplus, and leaves a slight shortage as long as they remain idle.

PRICE

Price during 1912 ranged from thirty cents a barrel for the lower grades to \$1.25 for the higher. The proportion of oil above 18 degrees gravity (Beaume) would indicate a total value of last year's product to the producers, of between \$50,000,000 and \$60,000,000, although definite figures are not at hand to give out. Even knowing current prices for oil through the year it would be very difficult to fix upon a definite total and probably the only manner in which to get close to the exact returns received is to await the issuance of the Geological Survey report, which makes a close estimate.

THE FIELDS

A general review of the production, well averages, and the percentage of the total production of the state made by each field develops some exceedingly interesting facts not likely to be known to the average oil producer. For one thing, the compilation of the year's statistics developed the fact that the Midway field produced 28.81 per cent of the total output of the state, making 25,948,980 barrels, as against 21,584,566 barrels in 1911, and 11,174,207 barrels in 1910, which chronicles the rise of Midway to the premier position of the greatest oil field in California. That the field could have made a considerably larger output in 1912 than it actually did make is unquestionable, but the shutting down of a large number of wells towards the close of the year undoubtedly kept the district from making at least 30 per cent of the total state production. Following Midway came Coalinga, with a percentage of 21.70 per cent of the

state's output, a total for the district of 19,546,122 barrels, a gain over the 1911 output, which totalled 18,324,701 barrels. Kern River came third, producing 13.82 per cent of the total production of the state, this amounting to 12,446,445 barrels, as against 14,078,390 for 1911; quite a falling off.

As taking up each field separately gives a much clearer idea of the operations in the various districts, affording a far better opportunity for comparisons, this method was decided upon for the presentation of the main facts shown by the figures, and these facts are herewith given as nearly as possible in the order in which the "Derrick" receives its figures month by month.

SAN JOAQUIN VALLEY

Kern River

Kern's total production amounted, as stated, to 12,446,445 barrels, an average monthly output of 1,037,204 barrels, or a daily output of 34,007 barrels. There were 1643 wells producing on December 31, 1912 and the average production per well per day was 19.5 barrels. This compares with 1911 as follows: Total production, 1911, 14,078,390 barrels; wells producing at close of 1911, 1622; daily average output of these wells, 21.5 barrels. Comparisons with 1910: Total production 14,776,435 barrels; wells producing at close of 1910, 1566; average production per well per day, 25.0 barrels. There were 90 wells completed and 13 abandoned in 1912 as against 136 wells completed and 26 abandoned in 1911 and 301 completed and 31 abandoned in 1910. The first given figures on this field show the gradual declining tendency of the field as a whole. The second set of figures show a decline in operations during the past three years and either an apparent increase in efficiency or less "wildcatting," since the number of abandonments decreased in 1912 over the decrease in completions from the previous year. Perhaps the best way to display that Kern has not kept up in proportion to the state increase is to give the field's percentage of production during the past four years: 1909, 24.93 per cent of total state output; 1910, 19.02 per cent; 1911, 16.81 per cent; 1912, 13.82 per cent.

McKittrick

(Including "Belridge")

Production, 1912, 6,462,350 barrels. Number of wells producing December, 260. Completed during 1912, 72; abandoned, 6. Average production per well per day (December) 71.8 barrels. Compares with 1911 as follows: Production 1911, 5,477,532 barrels. Number well producing December, 197; completed during year, 36; abandoned during year, 5; average daily production per well, 82.8 barrels. Comparison 1910: Production 1910, 5,471,613 barrels; producing December, 189; completed during year, 60; abandoned, 8; average daily production per well, 90 barrels. Four years percentage statistics, showing proportion of the state's output are as follows: 1909, 9.98 per cent; 1910, 7.04 per cent; 1911, 6.55 per cent; 1912, 7.17 per cent.

Midway

Midway is today the greatest known individual oil field in the entire world. The statistics given herewith show the rapid rise of this greatest of oil fields. In 1910 Midway produced but 11,174,207 barrels, despite the fact that the Lakeview gusher came in in Sunset on April 15 of that year, starting the big rush. In 1911, owing to the remarkable activity brought on by the development of the gushers that followed the Lakeview in rapid succession, the production had almost doubled, totalling 21,584,566 barrels, the increase continuing in 1912 despite the efforts to curtail, and bringing the total for the past year to 25,948,980 barrels, 28.81 per cent of the total production of the entire state. Midway's marvelous rise as an oil producing district during the past four years is displayed in the following percentages showing its proportion of the total production of the state during this time, probably the fastest and greatest development known into the history of the oil industry: 1909, 3.84 per cent; 1910, 14.38 per cent; 1911, 25.77 per cent; 1912, 28.81 per cent of the state's total output for the year. The number of producing wells in December, 1910, in Midway, totalled but 318; there were 238 completions and 17 abandonments in this year. The average production per well per day for the entire year of 1910 totalled 122.6 barrels. In December 1911 the number of producing wells had increased to 546. The average production per well per day for the last month of the year totalled 122.8 barrels; the increased number of wells making two-tenths barrels per day more oil than for the same month the year previous; and the increase in the wells numbered 226. In December of 1912, there were 681 wells pro-

ducing. The average production per well per day for December of last year totalled 110.6 barrels, showing that most of the larger wells had steadied down, although there were a number of very large gushers during the year. Seventeen wells were abandoned in Midway in 1910; in 1911, owing mostly to water trouble in "pioneer" wells 47 were abandoned; in 1912 but 14 were abandoned, showing the water situation to be well in hand.

Sunset

(Maricopa)

Sunset's total production in 1912 shows a slight gain over that of 1911 and totals about 60 per cent of its 1910 production. The figures form a very interesting little sidelight on the ups and downs of an oilfield, giving history in the shortest possible space. On 1910 Sunset produced 9,218,904 barrels, this singular gain over the output of the previous year being due to one well, the Lakeview, which at its maximum flowed as high as 80,000 barrels a day but which is now making about 25 barrels output daily. In 1911 the output of the field had declined to 5,559,069 barrels and for the year under review the production was 5,590,824 barrels, a gain over the 1911 output of 31,755 barrels. However, sometimes figures are very deceptive indeed. Discounting the Lakeview, the Sunset field as a whole has made a steady gain in production as will be proved by the following percentages showing the relative production of the field to that of the whole state during the past four years: Percentage of total output of state made by Sunset in 1909 was 3.43 per cent; percentage 1910, 11.86 per cent; for 1911, 6.64 per cent and for 1912, 6.21 per cent. In other words, in 1909, when there was no Lakeview and the Sunset field was being developed in a gradual manner its output totalled but 3.43 per cent of the whole, while the following year, during which the Lakeview poured out its tremendous volume of oil the percentage shot up to 11.86 per cent of the whole. In 1911 the Lakeview declined while the big rush it had brought on in 1910 forced the state total away up, the result being that Sunset's proportional output declined to 6.64 per cent and for the past year the proportion is still lower though the production itself is higher. This serves to show that the increase in this field's production has not been in proportion to the increase of the production of the state as a whole. In the matter of wells producing on December 31, each of the past three years, a steady increase is displayed. The number of producing wells in the field on the date named for each of the three years follows: 1910, producing 138; 1911 producing 208; 1912 producing 249. At the same time there were fewer completions in 1912 than in either of the two previous years. Following is the record of wells completed during the three years: 1910, 79; 1911, 94; 1912, 56. The abandonments were as follows: 1910, 7; 1911, 7; 1912, 5. The average production per well per day was of course very high for 1910, totalling 112.6 barrels; for 1911 it totalled 83.7 barrels and for 1912 it was 54.5 barrels; which appears about a normal yield for a Sunset well. In considering the average well production in each field for this past year it must not be forgotten that most of the shut in wells are low gravity producers and probably the majority of them are the smaller producers of the valley fields, since the total estimated daily production for all of them is given as 26,830 barrels, which would make an average for each well of 23.77 barrels per day. This fact should be taken into consideration when computing the daily average production per well of any field where the wells produce under 18 degrees gravity oil.

Coalinga

Coalinga's production for 1912 was the greatest on record for that district, totalling 19,546,122 barrels from 763-880 producers. That is, there were 763 producers on December 31, 1911 and 880 December 31, 1912. The average production per well per day during the entire year totalled 56.9 barrels. Coalinga's percentage of the total state output was 21.70 per cent. Wells completed numbered 107; abandoned, 3. The very large amount of light gravity oil produced in this district insures a constant demand but operators did not extend themselves much in development work the past year, as prices apparently were not sufficiently attractive to them to justify it. Comparisons with 1911 and 1910 show the field to be much steadier as far as development is concerned, than Midway, where the developments have been so rapidly pushed in three years that that field has come up from eleven odd millions of barrels to almost twenty-six million barrels. Coalinga drilling limitations are fairly defined so that there has been comparatively little "new" work in the field during the past two years. This is shown by the statistics for 1910 and 1911 herewith: Production 1910, 18,

651,470; 1911, 18,324,701. (Shows curtailment in 1911.) Wells producing December 31, 1910, 733; December 31, 1911, 763. Completed during 1910, 218; during 1911, 139. Abandoned during 1910, 3; 1911, 16. Average production per well per day, 1910, 70.9; same for 1911, 76.6 barrels. Percentage of total output of state for four years: Percentage of state production, 1909, 26.47 per cent; 1910, 24.01 per cent; 1911, 21.88 per cent; 1912, 21.70 per cent. Our statistics unfortunately do not show the percentage of the total production of each field in grades of oil, as for instance, 20 per cent 30 degrees, 40 per cent 26 degrees, balance below 20 degrees—were such statistics given it would be an easy matter, knowing current prices for the various gravities, to compute the total value of the state's production and the total value of the production of each field, not only for the year, but actually day by day. It would be interesting data to give out readers, but this is one very important matter left out of the statistics we are able to present.

Lost Hills

The discussion of Lost Hills is taken up at this point because together with the five preceding fields already reviewed, it completes the San Joaquin Valley group, the total output of which was 79.2 per cent of the entire production of California for 1912. A paragraph will be devoted to this fact after the review of the field under discussion.

Lost Hills, the most recently developed field of any size in this state, was pioneered in 1910. Its development since that time has been rapid, but owing to the lack of a pipe line by which to make shipments until along towards the latter part of 1911, little oil was shipped that year and the major portion of what was produced in 1911 was probably consumed in the field by the companies conducting drilling operations, or stored. Discovery and pioneering work was practically all that was accomplished in 1910, but considerably more oil than there is any record of was probably, or rather, undoubtedly produced in 1911 in which year the shipments totalled 154,960 barrels. The increase in shipments shown by the 1912 figures therefore appear almost marvelous, but it must be borne in mind that they came as the result of the work of 1911 and 1910; the 1912 shipments totalled 1,313,076 barrels, most of which was high-grade oil. At the close of 1911, 8 wells were producing, while on December 31 or 1912, there were 52 producers. The average daily production of the 8 producers of 1911 was 179.0 barrels; a very high average indeed, but these wells were all comparatively new producers. The production of the 52 wells producing in December 1912 had dropped 50 per cent in daily average output, making 88.6 barrels. The production of the earlier wells fell off and the new producers were bound to have among them wells making a lower average than the first wells brought in, which included several big wells. For so young a district Lost Hills made an enviable record. Practically the baby field among the seventeen producing districts of the state, it produced 1.46 per cent of a total output greater than 90,000,000 barrels. Lost Hills comes ninth on the list of producing districts in California, being surpassed by all the valley fields and by Fullerton, Salt Lake and Santa Maria. That this field producing a comparatively high grade oil should inside of two years advance in production over Whittier-Coyote, Lompoc, and Santa Paula and should almost double the combined output of Puente, Los Angeles, Newhall, Summerland, Watsonville and Arroyo Grande, is worthy of note indeed. The combined production of the latter named fields for 1912 totalled 671,597 barrels, against the million and a third barrel production of Lost Hills.

A Summing Up of the Production of the Valley Fields

Out of the total production of 90,074,439 barrels of oil produced in California in 1912, the six fields in the San Joaquin Valley furnished 71,307,797 barrels, or 79.20 per cent. These fields form the greatest oil region in the world, known at the present time. The writer has not the figures at hand to show how much greater this output is than that of the nearest competing foreign oil producing country, nor indeed of the nearest other American fields, but it is safe to say that the Midway field alone made a greater output during 1912 than any one foreign oil producing district, (with the possible exception of one Russian field.) If possible the next issue of the Derrick will contain statistics showing the position of California fields as compared with foreign and other American fields which should make interesting reading. The big oil wealth of California at the present time is in the San Joaquin Valley fields, and the following table, which was compiled by Mr. Blythe H. Henderson for the writer's use, will show as nothing else could how the valley fields have advanced in production over the Southern and Coast fields since 1906. It seems an opportune point to state

that the work done by Mr. Henderson, while more a "labor of love" than anything else, should be of very great value indeed to those interested in the oil business in California. It is doubtful if any individual corporation in the state, excepting only the Standard Oil Company, has such a complete statistical record of California's operations and production since Standard Oil first began furnishing these figures. Following is the percentage table prepared by Mr. Henderson showing the different positions in production of the regions mentioned since 1906.

Production Percentage Table

	1912	1911	1910	1909	1908	1907
San Joaquin	79.20	77.80	76.30	68.70	61.10	61.40
Coast	8.50	9.70	10.50	14.80	19.20	21.80
Southern	12.30	12.50	13.10	16.50	19.70	16.80

This table shows that the San Joaquin Valley fields, from producing three-fifths of the State's output in 1907, have advanced to four fifths (round numbers) in 1912, in the face of the enormous production gain during the period stated, the major part of which gain has been made in these fields. This might be used as an indicator towards the safest place for the investment in oil property, but it is not, of course, suggested that this be done in specific cases. However, no matter in what manner the table may be used or construed, it brings out one point. The San Joaquin Valley fields have increased their percentage of the total output of the state at the expense of the Coast and Southern fields. In barrels the production of the three districts for 1912 reads as follows: San Joaquin Valley, 71,307,797; Coast, 11,110,315 barrels; Southern, 7,656,329 barrels. The Coast fields were led by Santa Maria and the Southern fields by Fullerton-Brea.

COAST FIELDS

Watsonville

Watsonville increased its output a little over three thousand barrels in 1912, as compared with an increase in 1911 over 1910 of 4,190 barrels. The figures for the three years are: Production 1910, 36,660 barrels; 1911, 40,850 barrels; 1912, 43,920 barrels. Watsonville's percentage of the total state production for four years is as follows: 1909, 1.11 per cent; 1910, .05 per cent; same 1911, and 1912. There were no abandonments in any of the last three years and the average production per well per day has ranged from 23.3 barrels in 1910 to 24.0 in 1911 and 1912. There are five wells in the field.

Arroyo Grande

This district is now practically deceased as it produced only 1950 barrels in 1912, operations being discontinued about the end of the first quarter of the year. In 1910 the district produced 22,310 barrels, in 1911, 20,500 barrels and in 1912 as chronicled. There were 6 producers in 1910, 5 in 1911 and none after the end of March, 1912. The average production per well per day in 1910 was 21.5 barrels, in 1911, 17.2 barrels. The oil was very heavy and difficult to produce. The field appears to have wound up its business.

Lompoc

Lompoc made a big forward stride in 1912, as it did in 1911 over 1910. The production for the three years was as follows: 1910, 698,210 barrels; 1911, 795,000 barrels and 1912, 1,013,880 barrels of oil. As a producing field Lompoc has worked up steadily in percentage of the total state output as well as gaining strongly over its own output each year for the past four years. The percentages of the state output produced by Lompoc during the years 1909, 1910, 1911 and 1912, respectively, are as follows: 0.82 per cent, 0.90 per cent, 0.95 per cent, 1.13 per cent. This is an excellent showing, especially in view of the rather heavy quality of the oil produced. December 31, 1910 there were 20 wells producing; December, 1911, 24 producing; December 1912, 23 producing. There were 6 completions in 1910, 5 in 1911 and 3 in 1912. Only 1 well has been abandoned in the district in the past three years and that abandonment occurred in 1911. The average production per well per day during the three years gives this field the highest all around well average in the state. For 1910 the daily average output per well was 125.0 barrels; for 1911, 96.1 barrels and for 1912, 124.8 barrels of oil. This averages 115.3 barrels per well per day for the three years; a splendidly maintained production.

Santa Maria

Santa Maria, the leading Coast field, shows a small decline in production for the year 1912 as it did for 1911 as compared with 1910. The reason is that 1910 was the biggest year in the

history of this district, due to the great Palmer gusher production in that year; and the falling off of this well served to lower the output of 1911, despite the other big Palmer wells; and as for 1912, it would have been a small year for the district had not the Union's "Bell 5" made such a big output, together with a couple of other large wells brought in during the year, although the field maintains the second highest average output per well per day in the state. Considering the abatement of the Cat Canyon excitement, or at least the slackening in the development boom that reached its height in 1910 and continued until early in 1912, this last year's production is really a big showing for the district. It must be remembered that the Cat Canyon oil is very heavy, that operations are costly and drilling is deep. These things taken into consideration, and the marketing conditions this past year being also weighed, it must be conceded that the output was larger than would have been expected. The reason was that operations were pushed in the old field with excellent results, several big wells producing high gravity oil being obtained.

Following are statistics for 1912 and comparisons: Production 1910, 6,909,629 barrels; 1911, 6,670,074 barrels; 1912, 5,788,068 barrels. Wells producing in December, 1910, 139; December, 1911, 160; December, 1912, 152. (showing temporary discontinuance in 1912.) There were 24 completions in 1910; 12 in 1911; 23 in 1912, most of which were in the old field. Abandonments in 1910 numbered 3 as against 7 in 1911, and but 2 in 1912. The average production per well per day for December of each of the three years is as follows: 1910, 119.9 barrels; 1911, 113.9 barrels; 1912, 92.6 barrels. The percentage of the total state production made by Santa Maria the past four years is very interesting indeed. In 1909 the district made 12.97 per cent of the total output; in 1910, when the Valley fields began coming up, Santa Maria began going down in the scale of proportion, making but 8.89 per cent, while in 1911 the proportion of the total output was still less, being 7.95 per cent and in 1912 it had sunk to 6.42 per cent of the ninety millions produced. But as far as taking these figures for a basis upon which to invest as concerned, it does not appear that they would necessarily be the best possible to go by, as the Santa Maria sands are very thick and the wells will probably be producing when certain other districts have passed into history.

Summerland

Summerland, the oilfield in the Pacific Ocean has declined in production the past two years at the rate of about 4,500 barrels per year. The figures for 1910, 1911 and 1912 follow: Production in 1910, 74,725 barrels; 1911, 71,255 barrels; 1912, 65,715 barrels. The percentage of the total production of the state made by the Summerland wells varies from .11 per cent in 1909 to .07 per cent, showing a steady decline. There were 134 producers in 1910; 130 in 1911 and 122 on December 31, 1912. No new wells have been brought in during the last three years. There were 4 wells abandoned in 1910, none in 1911, and 1 in 1912. The average production per well per day has been practically constant at 1.4 barrels per well daily in 1910 and 1.5 barrels daily during the past two years. Operations here are confined to keeping the wells on production.

Santa Paula

Santa Paula maintains a steady increase in production, the output having grown from 492,147 barrels in 1910 to 515,675 in 1911 and 740,173 in 1912. There has been a proportional increase in the number of wells producing in December of each of these three years; 250 in December, 1910; 266 in December, 1911, and 313 in December last. Twice as many wells were completed in 1912 as in the previous two years; 21 each in 1910 and 1911 and 45 in 1912, when the market for light oil appealed more strongly to capital. Abandonments ranged from 19 in 1910 to 3 in 1911, and 8 last year. The average output per well per day has increased from 5.6 in 1910 to 6.2 in 1911 and 7.6 barrels in 1912.

SOUTHERN FIELDS

Newhall

This district continued to decline in 1912 as during 1911. Production in 1910 was 160,428 barrels, dropping in 1911 to 146,110 and to 119,712 in 1912. There were 78 producing wells this past December as compared with 67 for the corresponding period in 1911 and 77 in December 1910. No wells were completed in 1912 as compared with 2 in 1911 and 9 in 1910. Wells abandoned numbered 6 in 1910, 1 in the following year and none last year. The average output per well per day shows a decline of from 6.3 barrels in 1910 to 5.0 barrels in 1911 and 4.1 bar-

rels for the past year's daily average. Newhall's percentage of the state's output during the past four years varies from 0.19 per cent in 1909 to 0.21 in 1910, 0.17 in 1911 and 0.13 in 1912.

Salt Lake

The output of Salt Lake was somewhat smaller in 1912 than in 1911 and still further removed from the output in 1910 when 3,263,104 barrels was produced as against 2,794,233 barrels in 1911 and 2,662,776 barrels the past year. The number of producers operating in December of each of the past three years was 261 for 1910; for 1911, 267; and 286 during last December. In 1910 there were 37 completions, 19 the succeeding year and 20 in 1912. For the three succeeding years there were 3, 7, and 15 wells abandoned. Production per well per day averaged 31.3 barrels in 1910, 27.2 in 1911 and 24.6 in 1912. The percentage of the state output made by Salt Lake the past four years has declined as shown by the following successive percentages: 6.57 per cent, 4.20 per cent, 3.34 per cent, 2.96 per cent.

Los Angeles

The Los Angeles City field declined slightly in 1912 as it did in 1911. The figures are: 1910, 465,514 barrels; 1911, 429,528 barrels; 1912, 410,651 barrels. There were 400 producers in December last. Thirty-five wells were abandoned in 1910, 3 in 1911 and 13 in 1912. The average production per well per day was 2.8 barrels for 1910 and 2.7 barrels for 1911 and last year. There were no new wells drilled during the last three years.

Whittier-Coyote

Whittier-Coyote fields display a nice gain in 1912 over 1911, but have not yet caught up with the 1910 production. The last year's output totalled 1,125,769 barrels, as compared with 1,069,437 barrels for 1911 and 1,198,260 barrels for 1910. In December, 1910, there were 140 producing wells, this being increased by 7 producers in December, 1911, and dropping back to the same figure, 140, on production the last month of 1912. There were 15 completions in 1912 as against 6 each in 1910 and 1911. Four were abandoned last year, 1 the year previous and 4 in 1910. The average production per well per day for 1910 was 22.3 barrels; for 1911, 24.6 barrels and for 1912, 26.4 barrels. Whittier's percentages of the total state production the past four years read as follows: 1909, 1.46 per cent; 1910, 1.54 per cent; 1911, 1.28 per cent; 1912, 1.25 per cent. Whittier oil is mostly high grade and brings a good price to the producer.

Puente

Puente continues to decline as shown by the figures for the past three years herewith: 1910, 38,960 barrels; 1911, 32,895 barrels; 1912, 29,650 barrels. The production comes from 56 wells which were also in the running in 1911. In 1910 there were 55; in that year also 2 were completed; there have been no completions since. No wells have been abandoned the last three years and the daily average production has been almost unchanged; 1.9 barrels for 1910; 1.5 barrels for the past two years. Puente's percentage of state output during the past four years has declined from 0.6 per cent in 1909 to .03 per cent in 1912. In 1910 the field produced .05 per cent and in 1911 .04 per cent.

Fullerton-Brea

It is a noticeable fact that the Fullerton-Brea Canon field is the only producing district amongst all the Southern group that has steadily increased its output the past three years. Fullerton has been the scene of large activity and much success in this time. The good quality of the oil and the closeness of the field to Los Angeles have been a great inducement to development. There has been no trouble marketing the entire production of the field and the constant cry has been for more oil, which is shown by the increase in output in the following figures for 1910, 1911 and 1912: Production 1910, 5,044,001 barrels; 1911, 5,978,823 barrels; 1912, 6,764,360 barrels. The number of producing wells has increased in proportion. In December 1910 there were 237 producing; in 1911, 254; in 1912, 286. Completions for the same years were 23, 28, and 26 respectively. Five wells were abandoned in 1912 as against 3 in 1911 and 1 the year previous. The average production per well per day has climbed steadily during the years under review, coming up from 53.6 barrels in 1910 to 65.1 barrels in 1911 and 75.9 barrels in 1912. Some splendid wells have been brought in during the past year, tending to lift the general average production per well. Whether the Los Angeles market will be sufficiently disturbed to affect development in this field to any material degree when the valley oil is brought over the Tehachapi through the General Petroleum pipe line in the early

future, remains to be seen. The general opinion appears to be that the price for Los Angeles oil will not be materially lowered, but rather that the valley producers will get more for their product.

CONCLUSION

For the monthly production of each field during 1912 the reader is referred to the table in the center of this number of the Derrick. This table summarizes briefly as possible the conditions in every field during the past year. For 1912 it gives the yearly production made by each district, the average monthly production of each field and the state's average for the entire year; the average daily production of each field during December, total production of the state and the percentage of that total made by each field.

A table showing the production and consumption month by month for the past three years; the percentage of oil stored and consumed in each of these three years; the total oil in storage at the conclusion of 1912 and consequent visible supply; and finally, completions during 1910, 1911 and 1912, with comparisons and other data, is also presented under the large table for 1912. While a book could be written on the figures presented the aim of this review was not to write a book but to show conditions as they are, for the benefit of the oil industry, basing the whole on the figures available.

Probable Reorganization of the Seaboard Oil & Transit Co.

Following the recent activity of a Los Angeles Federal Grand Jury, which acted in secret and returned indictments against three of the officers of the Seaboard Oil & Transit Company and a number of other persons for "misuse of the mails", it is probable that the officers against whom the secret indictments were returned will resign from their positions and that the Company will be reorganized. Already a stockholders meeting has been held at which an advisory board of twenty-five persons was selected to act with and advise the present board of directors. This advisory board has appointed a committee to devise ways and means for the continuance of the business of the Company. Also, this advisory board will in the near future issue a statement to the stockholders generally which the officers believe will undoubtedly be entirely satisfactory to shareholders as the statement will probably show the exact condition of the company and will further show what efforts have been made to protect the shareholders by the present officers and the stockholders committee itself. The books of the company have been seized by the postal agent so that the company's officers labor under a difficulty in carrying on the business; but the offices are open and the business is being carried on in face of this trouble.

The indictments against Messrs. Riggins, McClure and Moore appear to have been the result of the collapse of the United Canadian Oil Company, of which they were formerly the officers. But what Allen G. Nichols was dragged in for is a mystery to oil men; it is believed that the indictment was what is known as a "blanket indictment" covering every one who could be dragged in on any pretext. President Riggins of the Seaboard stated that he could not understand his indictment under the grounds given out as its reason—misuse of the mails—and that there was absolutely no other reason. The Postal Department will show its hand when the case comes up for trial.

The Derrick had fully expected to publish a statement by Mr. Nichols, but in a brief personal letter to the editor, Mr. Nichols, who has been very ill with a combination of pneumonia and appendicitis, regretted his physical inability to write anything at this time. As the trial of the officers is scheduled for a quite distant date and as the Company can be practically reorganized between the present and then, it is to be hoped that small injury to the company will result from the prosecution of the present officers.

Wyoming in 1912

In April a gusher which flowed 1,200 barrels a day was drilled in 45 miles from Casper, Wyoming, in the Salt Creek field. This development started a general boom in the developing of Wyoming oil fields, especially in Natrona County. The Midwest and Franco-Wyoming refineries were both put into operation after they had been connected with the Salt Creek field by 6-inch pipe lines 43 and 47 miles long, respectively, and the gasoline and kerosene were marketed chiefly in Montana, where the residuum went to the Chicago & Northwestern Railway.—U. S. G. S.

The California Derrick's

Showing in Detail the Production of Every Field
During the

The Monthly Production of Every Field, the Average Monthly Production of Every Field and the Total Production of All the Fields

(FOR REVIEW OF YEAR, SEE LEADER)

These Figures Compiled By Mr. BLYTHE HENNING

Yearly Percentage of Total Production made by Ea. Field.	FIELD OR DISTRICT	County	January	February	March	April	May	June
13.82	Kern River	Kern	1,080,350	961,495	1,088,875	1,081,650	1,098,020	1,040,000
7.17	McKittrick	Kern	519,404	492,750	511,782	484,662	527,516	530,000
28.81	Midway	Kern	2,215,350	1,890,946	1,968,633	1,978,551	1,932,686	2,030,000
6.21	Sunset	Kern	491,226	418,267	447,795	442,950	461,621	460,000
21.70	Coalinga	Fresno	1,663,397	1,582,410	1,670,005	1,610,498	1,643,832	1,590,000
0.05	Watsonville	Santa Clara ..	3,720	3,840	3,720	3,600	3,720	3,720
.01	Arroyo Grande	S. L. Obispo ..	1,750	100	100			
1.13	Lompoc	Sta. Barbara ..	71,750	70,400	76,300	77,850	79,650	80,000
6.42	Santa Maria	Sta. Barbara ..	554,049	494,503	471,910	467,288	498,653	490,000
0.07	Summerland	Sta. Barbara ..	5,170	4,760	5,725	5,675	5,750	5,750
0.82	Santa Paula	Ventura	51,224	51,320	52,828	53,465	58,825	60,000
0.13	Newhall	Los Angeles ..	9,096	9,750	11,070	10,828	9,572	10,000
2.96	Salt Lake	Los Angeles ..	221,093	210,157	230,197	225,045	232,176	240,000
0.45	Los Angeles	Los Angeles ..	35,301	33,595	36,930	34,170	35,340	35,000
1.25	Whittier-Coyote	Los Angeles ..	108,675	92,330	93,337	84,317	88,275	80,000
0.03	Puente	Los Angeles ..	2,550	2,400	2,570	2,430	2,550	2,550
7.51	Fullerton-Brea Canyon	Orange	540,187	503,262	532,679	533,183	538,236	530,000
1.46	Lost Hills	Kern	52,966	71,507	85,042	112,570	116,731	110,000
	Salinas Valley	San Benito and Monterey (No Production)						
	Repetto	Los Angeles (No Production)						
100.00	TOTALS		7,627,258	6,893,432	7,289,498	7,208,672	7,333,180	7,340,000

Comparative Table Showing Production and Consumption, 1910, 1911, 1912

This Table Tells the Story of How Consumption, Far Behind Production in 1910, Grew

Percentage of Oil Consumed and Stored During Last Three Years, Total Storage Capacity of Wells Producing and other Well Statistics Showing

	January	February	March	April	May	June	July	August	September
Production in 1910.....	5,183,150	4,875,711	6,022,624	6,580,510	6,995,825	7,126,544	7,207,890	7,368,320	6,858,000
Consumption in 1910	5,097,559	5,434,123	5,679,479	5,445,243	5,424,812	5,306,156	5,542,908	5,530,120	5,327,000
Production in 1911.....	6,566,180	5,973,206	7,089,955	6,929,337	7,113,466	6,694,078	6,937,862	7,208,934	7,291,000
Consumption in 1911	5,577,946	5,162,233	5,087,551	6,095,113	6,434,136	5,905,036	5,897,048	6,406,115	6,369,000
Production in 1912.....	7,627,258	6,893,432	7,289,498	7,333,180	7,345,702	7,560,748	7,560,748	7,560,748	7,581,000
Consumption in 1912.....	7,065,372	6,301,985	6,551,765	6,406,918	6,434,136	6,918,759	6,982,945	7,314,213	6,677,000

Total oil in storage December 31, 1912—46,698,054 barrels.

Total production above consumption

Well Comparisons and Production

Total completions 1910, 1019; total completions 1911, 800; total completions 1912, 769. Total production 1910, 5,183,150 barrels; 1911, 6,566,180 barrels; 1912, 7,627,258 barrels. Number of wells shut down December 31, 1912, 1147. Estimated output of these wells 275,386 barrels per day. Present daily average production, if all wells in state (6772) were producing, estimated at 25,344 barrels per day from storage during December 1912.

Daily average production per well for entire state during month of December, 1910, 45.4 barrels; 1911, 45.4 barrels; 1912, 45.4 barrels. * .06 per cent greater consumption than production.

Complete Statistical Page

Every Recognized Oil Field in California Year 1912.

Production for the Entire Year, the Total Production of Each Summarized in one Comprehensive Table.

(CONTINUED FROM ARTICLE OF THIS BOOK)

ANDERSON and C. CARROLL WRIGHT

July	August	September	October	November	December	Average Monthly Production of Each Field (To within one- half Barrel)	Average Daily Production of Each Field	Total Production of Each Field for Year 1912
1,058,805	1,051,365	992,640	1,016,645	975,750	993,550	1,037,203 $\frac{3}{4}$	34,007	12,446,445
581,840	539,880	533,671	597,065	562,556	578,496	538,529 $\frac{1}{4}$	17,657	6,462,350
2,129,646	2,182,187	2,249,451	2,639,286	2,393,608	2,335,798	2,162,415	70,899	25,948,980
475,106	540,299	512,520	490,265	423,650	420,825	465,902	15,303	5,590,824
1,617,156	1,679,318	1,593,674	1,662,174	1,623,869	1,606,121	1,628,843 $\frac{1}{2}$	53,405	19,546,122
3,720	3,720	3,600	3,720	3,600	3,720	3,660	120	43,920
						162 $\frac{1}{2}$	shut down March	1,950
102,150	95,350	93,300	84,940	86,220	88,970	84,490	2,770	1,013,880
485,688	491,027	459,000	484,809	449,610	440,820	482,340 $\frac{1}{2}$	15,814	5,788,086
5,540	5,605	5,400	5,725	5,400	5,605	5,476 $\frac{1}{4}$	180	65,715
67,816	67,366	64,036	67,943	68,232	73,509	61,681 $\frac{1}{4}$	2,022	740,173
10,662	9,706	9,568	9,672	9,094	10,045	9,976	327	119,712
218,583	220,372	191,893	225,601	225,506	217,739	221,898	7,275	2,662,776
34,750	33,835	32,870	33,965	32,275	33,310	34,221	1,122	410,651
87,277	87,359	85,773	100,608	97,934	114,573	93,814 $\frac{1}{4}$	3,076	1,125,769
2,510	2,480	2,400	2,480	2,400	2,480	2,471	81	29,650
562,297	576,233	625,604	603,340	582,311	636,814	565,363 $\frac{1}{4}$	18,482	6,764,360
117,292	108,340	126,185	130,576	134,181	142,857	109,423	3,588	1,313,076
						Monthly Av. for Entire Year.	Daily Av. Prod. all Fields Entire Yr.	
7,560,748	7,694,442	7,581,285	8,158,814	7,676,176	7,705,232	7,506,203	246,105	90,074,439

Month by Month, During the Years 1910, 1911 and 1912.

Steadily Until at the End of 1912 the Marketers Were Drawing on their Stocks.

the, Average Daily Production, Average Daily Consumption, Number of
Present Condition of the California Oil Industry.

October	November	December	Total:Barrels	
1,552,281	6,323,189	6,603,496	77,697,568—Production 1910	Percentage of oil stored in 1910—14.84 per cent.
1,704,981	5,714,706	5,969,157	66,172,373—Consump. 1910	Percentage of oil used in 1910—85.16 per cent.
1,283,434	7,210,297	7,446,041	83,744,044—Production 1911	Percentage of oil stored in 1911—12.91 per cent.
1,701,693	6,301,982	6,995,432	72,933,803—Consump. 1911	Percentage of oil used in 1911—87.09 per cent.
1,158,814	7,676,176	7,705,232	90,074,439—Production 1912	Percentage of oil stored in 1912— 7.40 per cent.
1,772,016	7,236,923	7,751,297	*83,409,630—Consump. 1912	Percentage of oil used in 1912—92.60 per cent.

1912—6,064,809 barrels. Visible supply December 31, 1912—186 days.

Years 1910, 1911, 1912

number of wells producing December 31, 1910, 4692; December 31, 1911, 5138; December 31, 1912, 5680 barrels per day. Estimated total number of wells capable of producing, 6772; production, 248,556 barrels. Present daily average consumption, 250,042 barrels. Daily actual condition, owing to low gravity producers' shut-down, 1486 barrels daily drawn

1911, 46.8 barrels; same, 1912, 44.2 barrels.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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The *** *Derrick's * * Creed

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

TECHNICAL ARTICLES

Technical articles scheduled for this edition of the Derrick will be published IN THE FEBRUARY NUMBER.

* * * * *

A REQUEST FROM THE MANAGEMENT

We request our kind readers to pardon our small delay in publishing this issue. When the contents are considered we feel sure you will do this. It has taken a great deal of time to collect the important data presented and a great deal of work to compile it and present it in the shape in which it is given. Considering the value of the figures to the oil industry we feel certain you will overlook the delay. We have greatly curtailed our news service this issue to make way for the Annual Review and tables, but we will devote the major portion of the February number to giving the developments of recent date which may not be included in this number, and such other important developments as may happen between the issue of this number of the Derrick and the February copy, which will follow this very closely; inside of twenty days, if possible. We greatly thank our readers for their past courtesies and beg to thank again the many who have recently renewed their subscriptions.—The Management.

* * * * *

A COMPLI- MENT

When the voucher-check received by the California Derrick from the Independent Oil Producers' Agency for subscription to the "Derrick" for the year 1913, came to hand, the editor noted that the subscription was charged to "statistical expense." This we consider a compliment. The editor would be glad to have the various oil companies not already subscribing to this publication, make a similar charge on their book—and would not feel any hesitation in signing the checks so charged even if the "statistical" part of the "Derrick" is only one of the many features which go to make this magazine of value to the oil industry.

* * * * *

AGENCY'S FORWARD MOVE

The Independent Oil Producer's Agency took a big step forward when the decision was finally reached to build a plant for the refining of Agency oil. The Agency has been at a real and decided disadvantage in having to sell their crude for fuel without first realizing anything from the lighter constituents, as they have been selling against the other marketing concerns for thirty-five cents a barrel net to the producers, a similar crude to that from which their competitors have first extracted the valuable lighter parts and have then placed the residuum in the market for the same price as the Agency has received for the untreated oil. From Coalinga oils alone, this must amount to a very large sum. More than a year ago the "Derrick" pointed out the fact that all the lighter oils were mixed with the heavier products and sold for fuel while double the returns received could have been obtained by first separating the crude from its gasoline content alone (not to mention distillate, etc.), and then placing the residuum on the market for fuel, which is the method of both the Standard and the Union oil companies.

ENORMOUS WORLD-WIDE DEMAND CAUSES PRICES TO ADVANCE

The Price for Pennsylvania petroleum has now reached the highest point attained for almost twenty years, \$2.50 per barrel to the producers, with the big refining companies eagerly bidding against each other for the product. This is the case with not only Pennsylvania oils, but generally over the country. Nineteen Twelve witnessed a tremendous extension in the demand for oils of all kinds, but the American output is smaller, and the Eastern fields show a decline, as do the Illinois, Louisiana, Oklahoma and Ohio fields. Kentucky, Indiana, Ohio, Illinois, Oklahoma and Kansas, and Texas and Louisiana oils have advanced in price. The advances have been all the way from 19 cents, the smallest advance, on Caddo, La., heavy oil, which sold for 41 cents last year at this time and is now selling at 60 cents per barrel, to an advance of \$1 per barrel for Pennsylvania, which is now selling at \$2.50 per barrel.

California oil in this time has advanced 5 cents, now selling at 35 cents per barrel for the under 18-degree Beaume. Oil is now being taken from stocks in California. There are 1147 wells shut in, according to Standard Oil figures. It is estimated that of the ninety million barrels produced here last year at least fifty-seven million barrels were consumed for fuel. The increase in consumption over 1911 is more than six million barrels; over 1910 more than seventeen million barrels. The opening of the Panama Canal need not be awaited as the time when a raised bid for oil can be expected. The raised bid is due right now.

* * * * *

PRELIMINARY U. S. G. S. FIGURES

Preliminary figures compiled by the United States Geological Survey place their estimate of California production for the year at 87,000,000 barrels, which is 3,000,000 barrels short of the production as shown by our figures. The Survey states that the consumption of California oil for fuel purposes alone in 1912 was approximately 57,000,000 barrels, "or more than four times the equivalent of the total production of coal in the Pacific Coast states." In regard to stocks the country over, the survey bulletin states: "In all the fields except those of California and the Gulf there was a steady drain on stocks during the year, so that, from a total of \$1,789,390 barrels—over a half year's output—on January 1, the stocks declined to 69,000,000 barrels at the end of the year. This drain reflects the increased capacity of the refining plants of the United States, the greatly increased exports, and a gradual change in the general conditions of the industry by which gasoline has become more in demand, so that the trade is well satisfied with heavier grades of gasoline or naphtha. For this reason the dividing line between naphtha and kerosene has necessarily been drawn nearer to kerosene and a large quantity of oil has been distilled into the gasoline portion of the products and a less output of kerosene resulted. On the other hand the heavy residues which are marketed as fuel oils have come into greater demand, and owing to the ever-evident effort to increase the yield of light products by splitting up these residues the supply of fuel oil has not kept up with the demand. The advent of internal-combustion engines, such as those of the Diesel type, promises still higher prices for fuel oils. The United States has been slow in the adoption of these new engines, but their general adoption abroad has pointed the way to rapid increase in their use here."

The Survey bulletins accentuate as features of interest the development of the large, deep wells at La Habra, the extension of Coalinga territory to the south, the increased utilization of natural gas including the enterprise for piping natural gas from Midway to Los Angeles and the increased amount of gasoline obtained by compressing gasoline from natural gas; also the number of topping plant installations.

The Survey places prices of California petroleum at the beginning and close of 1912 as follows:

Oil	Jan. 1912	Dec. 1912
Coalinga, light .....	.60	.65
Coalinga, heavy .....	.30	.35
Kern County, light .....	.60	.65
Kern County, heavy .....	.30	.35
Santa Maria, light .....	.70	.70
Santa Maria, heavy .....	.40	.40
Los Angeles, light	1.00	1.00
Los Angeles, heavy .....	.70	.70
Fullerton and Whittier, light	1.00	1.00
Fullerton and Whittier, heavy .....	.70	.70

Scenes in Japan Where American Methods are Big Success

Up-to-Date Refineries, Transportation and Production Methods Make Nippon Oil Company Like Great American Concerns



(1) Upper left corner—The Kashawazaki Refinery of the Nippon Oil Company. (2) Upper right corner—The Akita Oil Field, developed by the Nippon Oil Company by the use of the Union Tool Co. Rotary (made in California). (3) Center—A

gusher in the Iino Oil Field, of the Nippon Oil Company. (4) The Kanata Oil Field of the Nippon Oil Company. Notice how the derricks are crowded together. (5) Tank Cars of the Nippon Oil Company.

Three representatives of the Nippon Oil Company who are visiting California at the present time on an inspection and tool-purchasing tour recently called at the office of the California Derrick to present their respects, and to become personally acquainted with the staff of this journal, which they have known as subscribers these four years past. The three gentlemen were: Mr. K. Ito, chief of the bureau of inquiries of the Nippon Oil Company, Mr. K. Sugimoto, of the producing department and Mr. D. Matsuzawa, also of the producing department.

Primarily Messrs. Ito, Sugimoto and Matsuzawa came to California to purchase tools for their company; secondarily to study production methods and acquaint themselves with the best and latest means of getting the oil out of the ground. Mr. Ito wished especially to meet Mr. Prutzman of the Derrick's staff, as he has read Mr. Prutzman's articles with a great deal of interest. Mr. Ito, who gave to the Derrick the photographs here reproduced, stated that California methods were achieving a great success in Japan. He stated that by the use of the Union Tool Rotary their company had brought in some excellent wells in about one quarter the time taken to drill by the methods formerly used. The company has nine rotaries in use at the present time and to date had brought in seven wells with the new machinery. American drillers are in charge of the rotaries. The Akita oil field has been developed by the use of the rotary drill. The wells range from 2500 to 3000 feet in depth and produce a very high grade oil, ranging from 36 to 40 degrees, Beaume. Their output varies from 50 to 150 barrels per day, although the company occasionally gets a spouter. The

company, which is under government control, is said to have placed orders in Los Angeles for four-fifths of a million dollars worth of California machinery, tools and equipment. The company employs the most intelligent men obtainable and deserves the success which it is achieving.

LAST YEAR'S EXPORTS

We are not able to discuss the exports of 1912 in this issue of the Derrick, but will attempt to do so thoroughly in the February Number. It is sufficient to say at this point that almost two billion gallons of American oils were sold in foreign lands, bringing \$121,875,382. to America. The exports were much greater than for 1911 or 1910, and the value was not only proportionally greater but the average value per gallon was higher in 1912 by 6.6 cents than the previous year. In the volume of fuel oils shipped, San Francisco made the greatest gain of any American port; from five and three fourths million barrels to ninety six and a quarter million barrels. The value increasing from \$99,857 to \$1,484,491.

The Rosecrans, the ill-fated tank steamer of the Associated Oil Company, was wrecked on the 7th of January off the Oregon Coast; bound for Portland with a cargo of crude. The loss of the steamer, including the cargo, was \$200,000.00. Greater than the money loss, however, was the loss of the lives of thirty-three of the crew, all of whom were drowned. The Rosecrans is said to have been wrecked beyond all hope of repair.

The Future Price of Fuel Oil in View of Present Condition of the Oil Industry Here

(By COLONEL TIMOTHY SPELLACY)

(In answer to the request of the editor Col. Spellacy has written the following short discussion of the present California Oil Situation and the reasons why the price of fuel oil must advance in the early future to a point "somewhere near just compensation." While the Colonel writes the article in letter form, it is not a personal communication but was written for the "Derrick's" readers.)

My Dear Mr. Wright:

In answer to your request as to my opinion of the future value of oil in California and reasons for the same, I make the following statement:

According to the report of the California Derrick during the month of December stocks were drawn on to the amount of 1,486 barrels per day, thus exceeding the production.

If continued the natural increase of consumption will certainly compel the marketers to draw heavier on stocks within the next six months. For the last six months, notwithstanding the numerous wells drilled by the large corporations, the latter have been unable to maintain production, which at the present time is 250,000 barrels per day. We have in view the gradual decline of over 7000 wells in California, that can be met only by more extensive drilling, which can only be brought about by an advance in the price of low gravity crude oil which for the last two years has been sold by many producers for less than the average cost of producing. It is the opinion of practical operators that unless the opening of some new oil field of large area and large wells is brought about, it will be impossible even with extensive drilling to maintain the present high production. If drawing on stocks at present time, when the Panama Canal is opened to commerce the result can be readily seen for a greatly increased demand for fuel oil.

In the East the price has greatly advanced; in the middle west within the last year the advance has been over 150 per cent. The same result should occur in California within the next year.

Individually, I cannot see the possibility of maintaining the present high production, even with the addition of a new field. In the East in most of the fields wells can be completed for \$2,000. In California a fair estimate of a fair average cost of wells is \$10,000. After completion operators in the eastern fields can produce from 50 wells at the cost of \$4.00 a well per month; but in California the average cost of producing and keeping the same number of wells in proper shape for production would be close to \$80.00 per well.

The great market in the future will be for fuel oil, not for the lighter qualities, and while heavy gravities have been discredited or at least at a disadvantage in the past, I am confident within the next year the great demand will be for heavy oils, oils not required to pass through a refinery to meet the legal requirements for consuming as fuel.

When less oil is produced than required for consumption, the only competitor is coal. With coal at \$6.00 per ton on San Francisco Bay, it is reasonable to believe that fuel oils should be sought for at a comparative price, and even at a higher price, considering its great convenience and saving of labor against the use of coal. If so, what argument can be produced to place fuel oils less than \$1.00 per barrel at the wells in the interior of California?

The "Interests" sometimes use the Mexican oil as a ghost with which to discredit the future of California oil. When one considers the great demand of the Atlantic Coast and Europe looking to Mexico and now bidding and paying higher prices for Mexican fuel oil than we receive in California, how is it possible to bring this oil in competition with oil at home?

In my experience of many years every indication for the future makes me an optimist as to the future price, and I believe it a great mistake in contracting oil for a period beyond one year from the present time at less than \$1.00 per barrel

Yours sincerely,

T. SPELLACY.

Interesting Developements of Recent Date in all the Fields

A movement is now afoot to bring the Standard Oil Co. and all other companies owning or controlling pipe lines under the control of either the State Railroad Commission, or the Interstate Commerce Commission; to the end that the transportation rates of the carriers can be regulated. Col. Timothy Spellacy and J. W. Jameson are back of this move. They have written a joint letter to the chairman of the Interstate Commerce Commission, in which they call attention to the fact that the Commission has "assumed control of pipe lines doing business in two or more states" and expressing a hope that "your honorable commission can find a way of helping the oil men and oil consumers of California by assuming the regulation of our pipe lines here." The whole of this letter will be given in the next issue of the Derrick.

The "falling through" of Col. Timothy Spellacy's dickering with outside parties to take the oil of a number of low gravity producers who had given the Colonel an option on the same, will work a hardship on not only these producers but also in many cases on the supply houses that have "staked" them. Col. Spellacy's option expired without his being able to use it. It is said a good number of the "under eighteens," will continue shut down. As for the rest they will probably join the Agency. The daily production of those who will join is given as 15,000 barrels, which leaves a daily production of about 11,000 barrels yet to find a market. The Agency has been drawing on stocks for several months so that this increased production will be a benefit to the allied independents. It is stated that

the Agency has drawn 3,000,000 barrels from stocks in the last six months.

A "blue sky" law has been introduced into the legislature and at the coming session will doubtless be passed. California needs it as does no other state in the Union. The provisions of the law call for the appointment of a commission whose sole duty shall be the investigation of corporations whose stock is put on the market, and to pass upon the good faith and solvency of the promoters of such corporations. The passage of this law means a "good bye" to get rich-quick Wallingfords and comparative safety to investors. It should have been passed in 1909.

It is stated that negotiations for the acquisition of the control of Associated from the Southern Pacific railroad are under way between Eugene de Sabla, Capt. John Barneson and the railroad. The alignment of the Associated, Union and Independent Agency under the control of the General Petroleum would make the combination the strongest on this coast, Standard Oil not excepted.

Standard Oil Company has practically completed its beautiful twelve story building in San Francisco, which will office the company, and will doubtless move into the new quarters as soon as they are ready. The company has recently purchased some extra heavy auto-delivery tank trucks of the highest grade and most serviceable nature. The Associated has also pur-

chased new delivery trucks, very similar to the Standard's. The sight of the old two and four horse drawn crude delivery wagon is now a rare one in San Francisco, as the Union installed motor delivery tanks over a year ago.

The U. S. Government has withdrawn 29,541 acres of land from public entry, same being known as "petroleum naval reserve No. 2." This land is located in the Buena Vista Hills and produces (some of it produces) high gravity oil. It is said the government will refine the oil, sell the lighter parts and use the residuum for navy fuel

The Producers Transportation Company will pay a dividend of \$1.25 per share on April 21st. This will be the first payment. Quarterly dividends at the same rate will issue until further orders by the board of directors. L. P. St. Clair is president of the Producer's Transportation Co.

General Petroleum Company has commenced work on its refinery plant, south of Los Angeles, and will rush same to completion. The plant's capacity, when completed, will be 20,000 barrels per day.

The Associated has finally decided to prosecute work on its refinery, which will be up-to-date in every particular. The refinery will be located at Port Costa, on San Francisco Bay.

At the regular annual meeting of the shareholders of the Union Oil Company, the same directors and officers were re-elected. President Lyman Stewart retains his position despite his expressed desire to retire from the company's active management. Capt. John Barneson, of the General Petroleum Company, has been elected director of the Union in place of J. S. Torrance, resigned, thus affording the General Petroleum Company representation in the Union's board.

Standard Oil's well on Emery lease, La Habra Valley, is doing 1200 barrels per day—fine oil.

The Agency's sales for November totalled 1,520,000 barrels at a net price to the producers of 34 cents per barrel.

A Geological Survey in Venezuela and Trinidad, B. W. I.

A Geological Survey numbering approximately one-fourth the staff of geologists employed by the United States Geological Survey is now making a reconnaissance in the northern part of Venezuela for a group of Eastern capitalists. By Eastern is meant Eastern U. S. A. The work has barely been started, but from indications already encountered the territory now being reconnoitered appears as if it might eventually become oil producing, at least in spots.

All told, there are twenty-five geologists in the party; which, without question, is a large corps for any private enterprise to employ at one time. More than half of these are graduates of California and Stanford. This virtually gives away the "secret" as to who has charge of the expedition—Mr. Ralph Arnold, formerly of the United States Geological Survey. Mr. Arnold selected California men "because they are as a rule better used to and more efficient in outdoor work."

At the regular meeting of the American Chemical Association, held in the Hollenbeck, Los Angeles, on January 17, to which the editor of the "Derrick" had been invited, Mr. Arnold, who was in attendance, gave a slight outline of the work of which he is in charge.

"You may say for me that we were fairly successful in locating and developing territory in the Island of Trinidad," said Mr. Arnold. Continuing, he stated that the geologic staff now in Venezuela had done the work in Trinidad. California drillers are in charge of the "practical end" of the business in Trinidad, where some excellent wells, locations for which were selected by the geologic staff, have recently been brought in. On the whole, the work is being carried on by California men, using California methods; and that is undoubtedly the reason for its success. It is needless to say that the persons who obtained Mr. Arnold's services looked for results; and in order to get them obtained the best material.

Patents Recently Granted

The following recently granted patents of interest to the oil trade are reported expressly for the California Derrick by Joseph M. Nesbit, patent attorney, Park Building, Pittsburgh,

Pa., from whom printed copies may be procured for 15 cents each:

Safety appliance for oil well tubing, S. A. Guiberson, Jr., Coalinga, Cal., 1,050,127.

Method of constructing and cementing wells, Andrew Smith, San Mateo, Cal., 1,050,244.

Pumping heads, S. M. Fulton, Pomona, Cal., 1,050,443.

Well drilling mechanism S. N. Hall, Houston, Texas, 1,050,533.

Plug for oil and gas wells, H. L. McLaughlin, Cleveland, Oklahoma, 1,050,557.

Automatic gas cut off, M. L. Grove, Tylersburg, Pa., 1,050,646.

Well driving apparatus, C. Le Due, Chatsworth, N. J., 1,050,668.

Packing for wells, W. S. Pierce, Franklin, Pa., 1,050,689.

Oil well capper, A. C. Mortensen, Coalinga, Cal., 1,050,976.

Repair device for pipe lines, James Clark, Bradford, Pa., 1,051,086.

Clamp for pipe joints of the bell and spigot type, James Clarke, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 1,051,087.

Pump rod for oil well sanding, J. F. Durham, McKittrick, Cal., 1,051,092.

Fishing tool, C. M. Heeter, Butler, Pa., 1,051,225.

Rope Socket, C. M. Heeter, Butler, Pa., 1,051,226.

Pump, G. C. Richards, Berkeley, Cal., 1,051,260.

Power head for deep well pumps, R. Fr. Muller, Berkeley, Cal., 1,051,347.

DIVIDENDS IN DECEMBER

The known dividends paid in December by companies operating in California were smaller than anticipated, and had it not been for the one and one-eighth million dollars paid by the Standard Oil Company, the total would have been less than \$500,000, the lowest for many months. As it was, the total was greater than a million and a half dollars, and greater therefore than ever before, if the Derrick's figures are not at fault. Following is the list of dividend payers in December, 1912, including the Mexican Petroleum, Ltd., which is owned in California.

Amalgamated	\$ 50,000.00
American Petroleum, preferred	8,755.00
American Petroleum, common	39,607.00
Caribou	8,070.00
Central	7,500.00
Claremont	5,000.00
De Luxe	30,000.00
Home	5,000.00
Mount Diablo	7,500.00
New Pennsylvania	5,000.00
Paraffine	3,000.00
Record	5,000.00
Monte Cristo	12,500.00
S. F. & McKittrick	5,000.00
Sauer Dough	2,992.50
Section 25	20,000.00
Standard Oil of California	1,125,000.00
State Consolidated	5,000.00
Traders	9,000.00
Union Oil	194,743.60
Union Provident	91,402.02
United Petroleum	48,450.60
W. K.	10,000.00
Western Union	5,000.00
West Coast preferred	10,408.00

Total California Companies\$1,613,928.12
Mexican Petroleum, Ltd., preferred 80,000.00

Grand Total\$1,693,928.12

Total dividend disbursements of California companies are now estimated to exceed fifty million dollars, although a great many companies and individuals have not made known their profits. January dividends will be given in the next issue.

Latest Quotations on Los Angeles Exchange

COMPANY	BID	ASK.
Amalgamated Oil	80 00	.....
American Petroleum Co., preferred	71 00	76 00
American Petroleum Co., common	50 00	75 00
Bear Creek Oil & M. Co.	72	.....
California Midway Oil Co.	14 1/4	14 3/4
Central .....	.....	1 10
Continental Oil .....	.....	25
Enos Oil Co.	04	09
Euclid Oil Co. ....	.....	30
Fullerton Oil	2 00	3 75
Globe	03	03 3/4
Maricopa Queen Oil Co. ....	.....	30
Midway Northern	09 3/4	10 7/8
National Pacific Oil Co.	04 3/4	04 1/2
New Pennsylvania Petroleum Co.	49 1/2	50 1/2
Olinda Land Co. (Oil)	39 1/2	.....
Palmer Oil Co.	14	17 1/2
Perseus Oil Co.	02	06 3/4
Rice Ranch Oil Co.	1 08	1 44
Trader's Oil Co.	60 00	70 00
Union	95 25	95 37 1/2
Union Provident Co.	106 37 1/2	106 62 1/2
United Petroleum	106 00	106 50
United Oil Co.	35 1/4	37
West Coast Oil Preferred	70 00	.....
Western Union	75 00	100 00

Latest Stock Quotations on San Francisco Exchange

COMPANY	BID	ASK.
Associated Oil	43	.....
Bay City .....	.....	70
Caribou	1 00	.....
Claremont	55	.....
Coalinga Central	20	.....
De Luxe	60	.....
Empire	40	.....
Illinois Crude .....	.....	05
Lucile	3 00	.....
Maricopa 36	35	.....
Monte Cristo	70	80
Pacific Crude Oil .....	.....	50
Palmer	15	16
Peerless	3 00	.....
Republic	15	.....
Silver Tip	50	.....
S. W. & B.	16	.....
Sunset Monarch	1 10
Turner	1 00
United Oil	38
W. K. Oil Co.	2 27 1/2
Storage Certificates	31

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The Cementing Process of Excluding Water from Oil Wells As Practiced in California

(By Ralph Arnold and V. R. Garfias in Technical Paper No. 32, Bureau of Mines.)

One of the most important problems connected with the economical recovery of oil is that of the permanent exclusion of water before or after the oil reservoirs are reached. As one of the most experienced operators in California forcibly expresses it, "The oil industry is the most important water business in the State."

In California the exclusion of water has been accomplished in a number of ways, determined by the local conditions, but so far the most uniformly successful method is the cementing process, which is used with slight modifications throughout the 11 principal districts in the state.

Although in some wells cement or cement grout is used between the casings in order to form an impervious packing which stops the inrush of water, this expedient is employed only in extreme cases, and as can be readily understood, does not affect the migration of oil or water through the strata penetrated by the wells. To prevent the flooding of the oil sands by the waters above or below, it is necessary to force the cement into the space outside the casing in order to form a water-tight bond between the casing and the walls of the hole.

The details of the operation vary with the location of the water sands in relation to the oil-bearing beds, it being comparatively easy to "ease off" waters occurring a considerable distance away from the oil zone, and proportionately harder to exclude water immediately over, between, or below the oil-bearing sands; and these difficulties are greatly magnified with the increased depth of the wells. The porosity of the formations penetrated, the different gravities of the oils, and the varying gas and hydrostatic pressures affecting the oil or water are also important factors having a direct bearing on the problem of shutting out the water.

The number of water sands penetrated before the oil-producing zone is encountered varies, being usually from one to five. In some fields there exist two or more distinct oil zones and a water sand sometimes occurs between these oil zones, in which case the cementing operation becomes doubly important, as the greatest care must be exercised in order to effect the recovery of the oil from these different sands without admitting the intervening water. Oil zones situated as those

referred to above are found in the Coalinga-Westside field, where it has been impossible to produce simultaneously from the "light" and "heavy" oil sands without encountering considerable trouble with the water lens that in places occurs between them. The general practice at present is to exhaust the upper sands before tapping the deeper ones.

Two General Methods of Cementing Oil Wells

Although there are many processes of cementing in use, which differ as to minor details, the operation is in general accomplished in two ways: (1) By pumping the cement mixture through the tubing, whence, unable to flow back between the tubing and the casing, it is forced outside the casing; or (2) by lowering the cement mixture in a dump bailer, and forcing it to the outside either by means of a plunger driven down with the aid of water under pressure, or with a plug fitted to the end of the casing. The first-mentioned method is commonly known as the pump method and the devices used for the latter according to detail are variously designed by names of inventors as the Perkins cement plunger or the Baker cement plug.

Recommendations and Suggestions

Previous to discussing specifically the two processes mentioned above the following recommendations and suggestion are presented. These should be observed, irrespective of the process employed, in order to accomplish a successful cementing operation:

1.—A careful study of the well records in all neighboring wells should be made, in order to understand the underground conditions of the immediate territory, before it is decided at what depth or in which formation the casing should be "landed" and cementing undertaken.

2.—The condition of the hole should be such as to allow the free lowering and raising of the casing, thus assuring between it and the walls of the hole a space through which the cement mixture may move or circulate before the initial setting takes place. It is usually a good plan to underream the lower 30 or 40 feet of the hole, thus facilitating circulation and the forma-

tion of a thick protective layer of cement around the lower portion of the casing.

3.—The well should be cleaned of all debris and mud, and enough clear water should be pumped in to wash out any sulphur or alkaline water.

4.—It should be ascertained whether the casing leaks by the use of a casing tester or other effective means.

5.—Previous to cementing, some definite information should be gained relative to the action of the water in the hole on the setting qualities of the cement. If the action is detrimental a chemical analysis of the water should be made with the intent of ascertaining and perhaps correcting the deleterious effect of the particular salts in solution. An excess of gypsum in the water might delay the setting of ordinary cement three to four months. To meet this condition a quick setting cement should be used. Considerable quantities of alkali in flowing water may destroy or disintegrate cement.

6.—Whatever the composition of the water in the hole it is of the utmost importance that the water used for mixing with the cement be as pure as possible, preferably condensed water from the boiler, as the character of the water will have a controlling effect on the subsequent behavior of the mixture. If the water is warm the time of setting will probably be shortened. In all cases the mixture should be as thick as can be conveniently handled under the circumstances.

7.—As the initial setting of cement under ordinary conditions takes place in about two hours after the mixing with water, this time will to a certain extent limit that employed in the operation, but as the mixture remains comparatively soft for two hours longer the cement may possibly be pumped during the third or fourth hour after mixing if greater pressure is exerted.

8.—Although no appreciable change occurs in the cement after being allowed to set for about two days, the hole preferably should not be disturbed for two weeks, during which time the pressure maintained should be as nearly as possible that used during the cementing. In one well, however, where the ordinary precautions were used, the cement was found to be in a fluid condition and was readily pumped out after remaining in the hole for 13 days.

9.—In shallow wells it may sometimes be advantageous to pump in cement until it reaches the surface, an indication that all the cavities are filled, and that when the cement shall have set, it will form a protective coating around the casing for its full length. Such a procedure is also advisable in any well where the waters are of such character as to corrode the casing quickly.

10.—The approximate quantity of cement to be used should be carefully ascertained after a close study of neighboring operations. If the quantity be too small, the result will be unsatisfactory, and if the pumping be done indiscriminately the expense will be increased without improving the chances of accomplishing a successful job.

11.—After the cement has been pumped into the hole and the casing lowered to the bottom, all the mixture that remains inside the casing should be bailed out as soon as possible before it sets, as the subsequent drilling of such cement core is difficult and is responsible for many of the failures in cementing wells, the jar from the heavy tools causing the cement outside the casing to crack.

12.—After the cement has been allowed to set sufficient time, the water should be withdrawn, the oper-

ation being gradual in order to avoid the possible collapse of the casing or the jamming of considerable loose material on the bottom from the inrush of the outside water if the cementing operation has not been successful. By pumping the water, say one-third at a time, at intervals of 12 hours, any sudden inflow will be readily noticeable by the rising of the inner water level, and this water will tend to equalize the hydrostatic pressures outside, and thus prevent the collapse of the casing. Should the well be a comparatively shallow one, the pressure of the outside water will not be sufficient to cause the failure of the casing, so that it may be advisable to keep the hole bailed dry from the beginning. In order to ascertain whether the water has percolated through holes in the casing itself, a casing tester may be used. This consists of two or three joints of tubing open above and closed at the lower end and having bolted at the open end a ring of belting of such diameter as to fit snugly into the casing. The tester is lowered with the sand line, say 500 feet at a time, and withdrawn to observe whether any water has collected in the tester throughout that distance, and by repeating the operation it can be ascertained whether the casing leaks, and if so, at what place.

13.—In general, most of the failures of the cementing operation can be attributed to improper circulation on the outside of the casing, poor quality of cement, the deleterious effect of salt waters on good cement, lack of sufficient pressure in the pump to overcome unforeseen obstacles, or, where gas has been encountered below the place where cementing is to be undertaken, to the improper exclusion of the gas, a condition that will keep the cement above constantly agitated and prevent it from setting.

(To be Continued.)

OIL MEN

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California Production for and Field Operations

During January, 1913

Slight Decline from December's Records

Both production and consumption declined slightly in January, storage being augmented by 55,834 barrels. It will be recalled that some 46,000 barrels was taken from storage in December, so that there is a difference of 100,000 odd barrels being consumed. The totals are still in the 7,500,000 to 7,750,000 class, the highest production figures having been reached last October, when more than 8,000,000 barrels was produced.

The total production for the month of January was 7,582,643 barrels, against 7,705,232 barrels for December, a loss of 122,886 barrels. The total consumption was 7,526,512 barrels, as compared with 7,751,297 barrels for December, a loss of 124,785 barrels. As Coalinga produced 110,000 barrels less oil in January than for the month previous, the main loss lies there, although Midway shows a loss of approximately 45,000 barrels also. January appears to have been one of the usual "catch your breath" months between record-breakers. The December daily average production was 3,964 barrels greater than that for January, the figures being: Daily average in December, 248,556 barrels; in January, 244,592 barrels of oil. There is more variation in the daily average consumption for the two months as the following figures show: Daily average consumption December, 250,042 barrels; in January, 244,791 barrels. Smaller average amount consumed daily in January than in December, 7,251 barrels of oil. It is considered likely, from past figures, that this "loss" will more than be made up in February, although, because of the shortness of the month, the total figures are not likely to be so large. The number of wells shut in in January is not given in our table.

Standing of the Various Fields

Of the Valley fields, Kern declined 14,880 barrels

from December's output, Midway declined 45,516 barrels, Coalinga declined 110,088 barrels; the three remaining Valley fields showed gains as follows: McKittrick's gain 2,880 barrels; Sunset's gain, 45,105 barrels, Lost Hills' gain, 24,207 barrels of oil. Combined, the valley fields show a falling off during January of 98,292 barrels.

Watsonville made less oil by 1395 barrels than for December. Arroyo Grande has been completely dropped from this report as operations there have ceased. Lompoc shows a loss of 26,722 barrels, Santa Maria a loss of 12,927 barrels; Summerland a loss of 15 barrels while Santa Paula gains over December by 1,497 barrels. Newhall produced less oil by 661 barrels; Salt Lake makes 17,853 barrels less; Los Angeles declined 790 bbls. The remaining fields make a gain, as shown by the figures following: Whittier Coyote gains 13,332 over December, making a total output of 127,905 barrels. Fullerton's production tops the December output by 20,920 barrels, the total amounting to 657,734 barrels. Puente with a production of 2500 barrels, gains exactly 20 barrels over its December output.

Field Operations

There were 60 rigs completed in January, a gain of 2 over December's completions. As against 375 wells drilling in December there were 363 drilling in January, or 12 less. These 12 were put on production, as shown by the increase of 12 in the total number of wells producing, the comparative figures being: Producing, December, 5626; January 5638. There were 56 completions in January, 3 less than in December, while but four were abandoned in the month under review as compared with 7 the previous month.

Following is our regular table, showing all the operations in detail, the total production of each field and the grand total:

County	Rigs Comp.	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month
Kern River .....Kern	12	7	1649	7		978,670
McKittrick .....Kern	7	10	273	6	1	581,376
Midway .....Kern	16	101	685	20		2,290,282
Sunset .....Kern	2	30	254	4		465,930
Coalinga .....Fresno	3	64	880	8	2	1,496,033
Watsonville .....Santa Clara			4	2	1	2,325
Arroyo Grande .....San Luis Obispo ..						
Lompoc .....Santa Barbara		1	19			62,248
Santa Maria .....Santa Barbara		17	149	1		427,893
Summerland .....Santa Barbara			122			5,590
Santa Paula .....Ventura	8	25	302	4		75,006
Newhall .....Los Angeles		2	78			9,384
Salt Lake .....Los Angeles		12	287	1		199,886
Los Angeles .....Los Angeles			400			32,520
Whittier-Coyote .....Los Angeles	3	15	139			127,905
Puente .....Los Angeles		1	56			2,500
Fullerton-Brea Canon .....Orange	4	55	289	1		657,734
Lost Hills .....Kern	5	20	52	2		167,064
Salinas Valley .....San Benito and Monterey		2				
Repetto .....Los Angeles		1				
	60	363	5638	56	4	7,582,346

Summary

	Barrels.
Stocks, Dec. 31, 1912	46,698,054
Production, Jan. 1913	7,582,346
	54,280,400
Consumption, Jan. 1913	7,526,512
Stocks, Jan. 31, 1913	46,753,888
Daily Average Production	244,592
Daily Average Consumption ..	242,791
Daily Average Surplus	1,801

Exports of Oil from California During Year 1912

An inkling of the increase in the exports of California oil during the past year over the year previous was given in a brief editorial notice in the January number of the Derrick, with the promise that the matter would be taken up in detail in the present issue.

The increased shipments of all kinds of oils was marked, totalling 60,748,065 gallons, or 1,446,382.5 barrels, a gain of close to 42 per cent over the 1911 total. The receipts show not only a much greater gain, but a greater proportionate gain for the same period. From the 1911 exports the shippers realized \$3,816,350; for 1912 the returns were \$5,886,358; thus a clear money gain of \$2,050,008, is recorded in favor of 1912. The latter sum represents a gain of slightly less than 54 per cent over 1911. Much of this increased business undoubtedly went to the Independent Oil Producers Agency, which is probably the reason for the slight increase in their net per barrel returns toward the latter part of the year. The Standard's business is also understood to have increased mightily, but as to this we have no exact data so that we cannot say for a certainty to what extent.

The most interesting figures of all those showing increase in shipments are those concerning the exportation of residuum, of which the Standard is the main distributor. These figures show an increase of more than ninety million gallons which would be marvellous indeed were not the drop in the crude shipments so very noticeable, these falling off forty-three million gallons in 1912. However the big increase in 1912 is shown in these two commodities; for the increased shipments in the residuum offset the drop in the crude exports and make a gain in the sale of the combined commodities of over 47,000,000 gallons. A possible method of determining the Standard's export fuel trade would be to charge off the drop in crude shipments of 43,000,000 gallons to this company, as they shipped practically all the residuum, and add to this 43,000,000 gallons about fifty per cent of the 1912 increase in fuel shipments, (totalling 47,000,000 gallons), which would give a total export fuel trade to the Standard of approximately 76,500,000 gallons for 1912. This may be termed a crude method of determining, but as the Standard is selling residuum for fuel almost exclusively, and as the drop in crude shipments did not come out of the Agency's business, and as the increased residual shipments must be credited mostly to the Standard, because neither the Agency nor the Associated handle residuum as yet, it serves to give a rough idea of what the Standard's business in this trade probably approximated. Even at this, the figure may be 25,000,000 gallons too small.

Illuminating Shipments Increase

Shipments of illuminating increased more than any other product excepting residuum. The increase in illuminating totalled 13,175,105 gallons, bringing the total shipments of this commodity to within 5,000,000 gallons of the residuum exports. The returns appear to have increased much more than proportionately, the 1912 sales netting \$3,933,930 as against \$2,681,093 for 1911, a gain for 1912 of \$1,252,837, the lion's share of which probably went to the Standard, inasmuch as this

great company have been assiduously cultivating the Oriental trade, to the extent, even, of selling lamps in China below actual cost in order to induce the demand which has undoubtedly now sprung into existence. This shows, if it is not improper to remark upon the same at this point, the remarkable enterprise, industry and perseverance of what is perhaps the most wonderful sales organization in existence—the Standard Oil sales force. The sun never sets on the activities of this Corporation.

Increase in Shipments of Lubricating and Paraffinous Oils

A substantial gain was also shown in the lubricating and paraffinous shipments, the same amounting to 194,884 gallons, valued at \$26,661 over those for 1911. The shipments for 1911 totalled 532,707 gallons valued at \$118,161, compared with 727,591 gallons valued at \$144,822, for 1912. The shipments of these oils and the gasoline and naphtha shipments form a very small portion of the export business of California.

Napthas, Gasoline, Etc.—Note Slight Increase

The increase in the shipments of these commodities is slight, the home demand being entirely too insistent to offer real financial inducement to the trade to send their products elsewhere. The increase is worthy of note however, totalling, as it does, 81,293 gallons, valued at \$12,537. The exact figures showing shipments are: 1911, 190,233 gallons, valued at \$33,990; 1912, 271,516 gallons, valued at \$46,527. The lack of gasoline exports must be charged against the extraordinary use of automobiles and gas engines used in every field of industry and pleasure in California, as there are approximately three automobile owners in California per population to one in the State of New York, and California is the second greatest automobile-using state in the Union, also the leading per-capita-auto user by three-to-one as the nearest competitor. Following is a comparative table showing at a glance the exports from the port of San Francisco in 1911 and 1912:

Comparative Table Showing Exports From San Francisco During Years 1911 and 1912

	(In Gallons)			
	1911		1912	
Commodities	Quan.	Values	Quan.	Values
Crude	60,966,338	883,249	17,983,555	256,588
Illuminating	78,228,087	2,681,093	91,403,192	3,933,930
Lubricating and				
Paraffin	532,707	118,161	727,591	144,822
Napthas, Gas-				
oline, etc	190,233	33,990	271,516	46,527
Residuum, Gas Oil and Fuel				
Oil, etc.	5,971,316	99,857	96,250,892	1,484,491
Total	145,888,681	3,816,350	206,636,746	5,866,358

The South Penn. Oil Co. has acquired the control of the Penn-Mex. Company, which holds leases on 160,000 acres of land in the gusher area of the Coast oil fields of Mexico. A number of experienced and very widely known operators join forces by this amalgamation. Officers and directors will be chosen in March.

A Brief Chronicle of Recent Happenings Near and Far

De Beque Oil District, Mesa and Garfield counties, Colorado, is described by E. G. Woodruff of the U. S. Geological Survey in Bulletin 531-C, just published. Address, Director U. S. G. S., Washington, D. C., for report.

Kern River Oilfields of California, Ltd., has acquired a lease on 20 acres in Fullerton field.

A prize of \$100,000 has been offered by the British Society of Motor Manufacturers and Traders for a "petrol" or gasoline substitute. The International association of recognized automobile clubs has agreed to finance a similar donation; both societies are in dead earnest. The rules determining the contest are: The fuel must be suitable for existing internal combustion engines; less expensive, readily procurable, and of such a nature that it cannot be cornered by either national or international trusts. (This latter may effectually prevent the capturing of the prizes by anyone.)

A well is reported to have been secured in Sacramento valley at 1200 feet. Information is so scarce that that is all we have on the alleged find.

Pennsylvania oil is now above \$2.50 per barrel.

Estimated amount of oil necessary for American navy this year is 350,000 barrels.

Congress has passed, or rather the House has passed a bill in which provision is made for a suitable home for the U. S. Geological Survey. The present quarters are entirely inadequate. Action by the Senate and signature of the President yet remain before the bill becomes law.

Oklahoma independents have organized into a permanent association named The Oklahoma Independent Oil and Gas Producers Association, headquarters at Tulsa. Cause of organization: to fight gas interest's lobby which is jeopardizing Oklahoma independent oil interests.

Natural gas in large quantities, struck in northern Alberta, Athabaska, Canada. Three wells.

The British Admiralty has purchased a large tract of shale oil land in New Brunswick, Canada, to serve as exclusive source of oil fuel for British navy. Cost of land was \$10,000,000. A chain of oil depots is reported being built for storage of thousands of tons of oil, all around British coasts.

The Agency sold 1,300,000 barrels of oil in December. The net to producers was 34 cents per barrel.

Continental Oil Co., former subsidiary of Standard Oil of New Jersey, will authorize its own dissolution March 6th at Council Bluffs, Iowa. A large stock distribution and reincorporation is anticipated.

Casiano No. 7, Huasteca Petroleum Co., Vera Cruz, east coast of Mexico, has now produced about \$21,000,000 worth of oil. Gravity 22 deg. Beaume.

The net earnings of the Midwest Oil Co., Salt Creek, Wyoming, totalled \$590,538 for the year 1912. Company gets very high grade oil, (20 per cent gasoline) from wells on 1590 acres now under development. The Franco-Wyoming Oil Co., same field, and Natrona Pipe Line and Refining Company, also operating in Salt Creek, are planning to extend the scope of operations. These companies have a contract with the "Texas Company" whereby the latter will handle their entire output.

California oil men are becoming interested in the Dayton oil district, in the Pecos Valley, New Mexico. There are several wells there producing a high gravity oil. E. L. Doheny, Norman Bridge, Thos. O'Donnell and the regular Doheny outfit are interested. Mr. Ralph Arnold, the eminent geologist, paleontologist and petroleum engineer, made an examination for the "Dayton Petroleum Company," the name under which Doheny's operations are being carried on, some time since. The land of the company adjoins that on which a well is producing close to 100 barrels daily.

The Standard Oil Company is making rapid headway at its El Segundo refinery and is installing five more stills, which will bring its capacity up to 20,000 barrels a day. This, with the addition of 3000 barrels a day at Bakersfield and 7000 more in anticipation, to say nothing of the Point Richmond refinery, would indicate that the Standard sees nothing but prosperity ahead.

Heavy crude similar to the California product is retailing to English consumers at \$2.00 per barrel. It brings 34 cents to Agency members. "When the Canal is opened"—what a field for the company with tankers! Diesel-engined tankers can carry the fuel at a very low cost indeed and make an immense profit on every cargo transported; if, indeed, they can get the oil at that time!

K. T. & O. Co. is running 25 strings of tools in Midway and 12 strings in Coalinga. General Petroleum is running 20 in Sunset-Midway and 5 in other fields.

Belridge Oil Co. has three new wells aggregating about 500 barrels new production daily. All shallow, less than 700 feet deep. The January output of Belridge district averaged 5,700 barrels per day.

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The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

NOT AN INDEX

Elsewhere in this issue, space is given to the export business of California during the years 1911 and 1912. As the discussion is a fairly thorough one it is not desirable to again go into the matter at this point, but a question of great interest which naturally suggests itself after considering the figures presented is: "What was the consumption of all grades of gasoline coming as a by-product from the California oil industry in 1912?"

The export statistics give us the brief figures showing the quantities of oils shipped to other countries, but the quantity of gasoline shipped in cases, tank steamers or cars to the states north and east of us, and how much was consumed here in California, are neither indicated nor hinted at, and there is not the barest index to guide us in our endeavor to learn these facts. Nor is there, as yet, anything definite known to the oil industry at large as far as we are aware, concerning the exact amount of gasoline extracted from gas during the last year, although this much at least is known, to-wit: That the gasoline secured by extraction, compression, or whatsoever method may happen to be in use on each lease where gasoline is being obtained from gas, undoubtedly amounted to a far larger supply than was produced in 1911, or than could have been anticipated at that time. This is due to many causes, among them being economy, hardship in selling low grade oil, making the drilling of low gravity producers unprofitable and undesirable, and, naturally following the necessity for economy, the turning of men's energies and minds to means whereby they might effect any saving. New systems have been discovered for rectifying low grade oils that not only clean the oil, but raise the gravity and at the same time give up a substantial revenue from the extraction of gasoline. This is now a most important side of the oil industry of California and we would be indeed pleased were we able to give figures showing costs, profits and investments. But for this we believe we must patiently await the bulletin

issued by the Geological Survey, which may contain the desired information.

* * * * *

PRICE CUTTING BAD BUSINESS

Price cutting is a bad business for producer refiner, marketer; "independent," monopolist and foreign competitor alike cannot afford this practice. It is ruinous to the trade; for it lends basis to the belief on the part of the public, already egged on to a high state of indignation by the journals which make a living off the public's credulity, that the oil producers and refiners are getting fabulously rich by over charging for their products. In the long run, only the very wealthiest of dealers, which, substantially, means the Standard coterie of companies, can stand the terrible drain of a "price war." Independents cannot do business forever on a losing basis and as their means are more limited than those of the Standard, it is they who stand to suffer by the initiation of cuts. Yet, it is these very people, who can least afford to do this thing, that have already done so; the price of gasoline has been undercut in Los Angeles by independents several times and the Standard has met the drop.

The Oil World blames this drop on the Standard. We do not speak for the Standard, but we do ask in all fairness, what would they have the Standard do; lose their trade? It is true that gasoline is being produced from gas and from the crude oil by certain processes of condensation which are very cheap, so that there is more gasoline in the market at this time than could have been foreseen without foreseeing the new methods. But, the market is unlimited and gaining ground every day. In spite of the fact that practically every other commodity in demand has gone up all the way from ten to two hundred per cent within the past ten years while oil and gasoline prices have, until within the last year, remained constant, and in spite of the fact that the independents can easily find a market for all the gasoline they can produce at the same price as the Standard gets for its gasoline of the same quality, they have cut the price. Surely, they stand to suffer.

In addition to the Standard, the smaller concerns are soon to find themselves in competition with a very powerful organization which imports gasoline or "petrol" more cheaply than the independents can produce and market it for, and still realizes a profit. Also, be it borne in mind, this imported Sumatra product is excellent gasoline or "petrol." It is very high grade stuff. That the American Gasoline Company, which is the name of this powerful new factor, (a subsidiary of the British "Shell" Company) can undersell the independents at a profit to themselves, and thereby occupy the independents' market, is unquestionable. A stiff price war may be the result, the fight being mainly between Standard Oil and the American Gasoline Co., with the small gasoline refiners grubbing for existence. If the independents cut the price already in existence and the new company, to get a foothold, again cuts, and Standard Oil meets the cut, there will not be a great deal of profit in marketing gasoline. In the meantime the various "People's" newspapers will begin "yammering" that extortion has been practiced on the public all along, because the prices have come down, and they will make such a scream when a decent level is again reached that the same tactics now being employed in England will probably be taken up here, to-wit: A gasoline combine, similar to the English

"motor owners petrol combine" will probably be formed to buy gasoline directly from the wells at the lowest possible price, wherever it can be obtained. Thus double competition may result. Instead of cutting prices, the independents should stand as one man with the Standard and maintain prices at which some profit can be realized.

* * * * *

SOMETHING FOR NOTHING

Every time a large oil company makes a dividend payment, there is a howl.

The newspapers, in their desire to show their friendship for the public, "play to the gallery" to the fullest degree. The corporation making a ten per cent per year payment is an oppressor of the people; should it, by any good luck, make a fifty to one hundred per cent payment in a year, it is forever condemned.

Many people as well as newspapers, forget that it is often only after years of tireless effort to attain success that regular dividends can be paid to the shareholders. They forget that the shareholders put up their money to earn dividends. They forget that all the time the corporation has been developing its business to the dividend stage it has been an employer of labor, has put money into the community's pocket, has helped support the State and the Nation through its efforts. They forget that the oil business is one of hazard, where a man is as likely to lose \$150,000 as he is to make the same amount, and much more likely. And, finally, they forget that to the persevering conqueror a just reward is due; that oil cannot be obtained for nothing; that the individual or company that actually gets the oil and places it within their reach at a moderate charge is doing them a favor; that oil today is as necessary as many food commodities.

We have a strong suspicion that the public is ever on the alert to get the other fellow's product for nothing. "Something for nothing" always has had an irresistible charm for a certain type of mind and just as often as not has resulted in ultimate loss; if the profit is taken out of the oil business there will be no business. It is a whole lot easier to make a cry about the other fellow's big earnings than it is to do his work and make those earnings yourself. The idea of this editorial is that price regulation in the oil business is very undesirable but that if sufficient clamor is raised even such a far step as this is by no means impossible.

MIDWAY GAS DENIED LOS ANGELES BY STATE RAILROAD COMMISSIONERS

Investment of \$2,000,000 Held Up By Decision

The State Railroad Commission has denied Los Angeles natural gas. It has denied the application of the company for a certificate to operate as a public utility. The grounds, which are far-fetched, are given as the safeguarding of the public from a corporation which has so arranged matters as to bring about "a monopoly of the natural gas industry of California," and an additional claim is put forth that S. P. lands would be drained of natural gas by the company's gas wells (none of which are located on the S. P. Sections) and that as the government expects to regain these lands from the railroad, the government would be defrauded

were the gas to be drained off them. Application to distribute natural gas from Kern County to Los Angeles county points is therefore denied. Litigation will undoubtedly result. The gas company is just completing a \$20,000 terminal station on the property of the Honolulu Consolidated Oil Company, section 8, 32-24, Midway. To date the company has spent about \$2,000,000 on its line, stations and business preparation.

Seaboard Oil & Transit Co.

Most recent news about above company comes from this city, where a number of shareholders have held a meeting in the Phelan Building assembly hall, to devise plans to overcome the present difficulties. A committee was elected at this meeting to select a representative to work in conjunction with the Los Angeles directors and to represent the local investors. W. B. Rucker, J. C. Skinner and Otto A. Schmidt are the committee members. The necessity for reorganizing the company was called attention to by Mr. Louis P. Boardman, who made a special address to the company present on the present conditions. Los Angeles stockholders have elected a board of directors to represent them until the company's troubles are settled. We have no further news at this time.

New Trial for Wisner and Meyers

Wisner and Meyer, who with C. F. Humphrey, promoted a string of valueless and fraudulent companies a mile long (more or less), and who have been on trial in New York for about five months past, were held for a new trial when the jury having their ease reported inability to agree, due to the obstinacy of a single juror. Judge Mack, who heard the case, "grilled" the juror severely. The case will be re-tried at an early date. The last trial showed up flagrant abuses.

Union Oil Company has brought in a splendid well on its Graham & Loftus lease in La Habra. The new well, which is its third in that property is still flowing 1700 barrels daily, making the daily output of the three wells about 3000 barrels or 90,000 barrels per month. The company pays 37 1-2 per cent royalty on this oil, the highest of any known royalty paid in California.

The General Petroleum Company now has approximately 1,500,000 barrels tankage on its Essex lease in the Sunset district, the same being rapidly increased. A new 55,000 barrel steel tank has just been completed.

Associated Oil has another big well—section 34, 31-23, Midway, making between 8000 and 10,000 barrels per day, the largest in the field at present.

Traders Oil Co. has completed its topping plant on section 23, 32123, Midway and is now running same. Plant will treat 1000 barrels per day.

Excellent Article on Wyoming Oil

An excellent article on the oilfields of Wyoming is published in our contemporary the "Oil City Derrick" of oil city, Pa., in their issue of February 18.

"Progressive" Oil Company's hole near "Mexico," Kern County, will soon be tested. Strainer pipe will be used. The owners believe they have struck "pay" but—? "The drill will tell;" assisted by the tests.

Interesting Developments of Recent Date in all the Fields

NINETEEN-TWELVE MOST PROSPEROUS YEAR IN THE HISTORY OF UNION OIL COMPANY

The report of President Lyman Stewart of the Union Oil Company, read at the annual meeting, shows that this great independent corporation never before had so successful and prosperous a year as the one just closed, when the business increased 17.5 per cent over 1911, while, for the last three years the gain has been 89.8 per cent! The company's business activities now cover the entire Pacific Coast, from Alaska to Cape Horn; Hawaii also furnishing part of their trade. The report states that the business has increased greatly in Chili, Peru and Canada. We have not received a copy of the report as yet but give the Reporter's summary of it herewith:

"The company added 9,318 acres to its land holdings during the year, and now has a total of 240,807 acres, distributed as follows: Santa Barbara county, 90,307 acres; Ventura, 76,762 acres; Monterey, 23,800 acres; Los Angeles, 10,886 acres; Kern, 16,176 acres; Orange, 8,823 acres, and a large number of other tracts in different counties. The company has the most complete pipe line system of any marketing concern on the Coast and a large fleet of oil carrying vessels, to which will be added three more ships, two of 10,000 tons and one of 7,000 tons, which are now under construction. The company owns a controlling interest in twenty-one subsidiary concerns engaged in different branches of the oil business. The actual assets of the company are said to be greater than the face value of all its outstanding shares. Its quick assets are given as \$4,963,178. No reference is made in the report to the sale of the Union holdings to the General Petroleum company, although attention is called to the election to the board of directors of Capt. John Barneson, who is the managing director of the General Petroleum. As only \$500,000 of the proposed purchase price of \$20,000,000 has been paid over, it is no doubt considered more in the light of an option than a purchase. For the present year at least there will be no change in the active management of the company's affairs."

SALES MADE AND SALES REPORTED

Confirmation has recently been made of the sale of the combined United Oil, North American Consolidated Oil and Section Two Syndicate companies for a total of \$7,500,000, divided as follows: To the United, \$2,500,000; to the North American, \$3,500,000; to the Section Two Syndicate, \$1,500,000. The confirming word comes from J. M. Neeland, general manager of the Oil Producers & Refiners Ltd., of London, England. If the confirmation is correct, the deal is one of the biggest sales ever made at one time in the oil history of this state. The United is a Los Angeles Company; the North America and Section Two, are, we believe, controlled entirely in this city (San Francisco.) The United's present production is placed at between 20,000 and 30,000 barrels per month from eleven producing wells. The United secured several immense wells early in its history on its 80 acre property in section

31, near Fellows. The company is capitalized at \$2,000,000 and C. F. Whittier, who organized it, is still its president.

The North American Oil Consolidated, capitalized at \$15,000,000, with about \$1,000,000 stock and \$2,000,000 bonds issued, has 113 producing wells. The oil is mostly low gravity but the company also has a lease in La Habra valley, where high grade oil can be expected. Their present production is close to 150,000 barrels monthly, probably the largest individual production, excluding Standard, K. T. & O, and General Petroleum, of any in the Midway field. As for Section Two Syndicate, its property is mostly located in Midway, and it has one good producing well on section 2, 32-23, "near the Standard's gushers in section 23." One well is drilling and two were closed down before completion. On the whole, if the sale is actually made, and the purchase price as stated, it may be considered a good bargain both ways, as the purchasing company is getting good properties and is said to have money to continue developments while waiting for better prices, and as for the owners, the money will doubtless be very acceptable.

Probable Sale of Central

Negotiations are said to be "pending" for the sale of the Central Oil Company's property in the Whittier field, consisting of 2,250 acres on which about 60 wells have thus far been drilled and from which a monthly output of about 20,000 barrels is realized. The price stated is \$2,000,000, and it is remarkably high for this property which in no way compares with that of its neighbor, the Murphy Oil Company.

Western Union Sold?

A further reported "pending negotiation" is for the transfer of the Western Union properties in Santa Maria. These consist of approximately 9000 acres, of which 1200 acres is considered proven. Operations have been carried on for ten years, resulting in fifty wells and a present production of 40,000 barrels per month, while averages about 30 barrels per well per day. The property is doing better all the time, having increased its monthly output in the last three years from 18,000 barrels to present production. The sale may be merely one of those beautiful rumors.

General Petroleum Holdings

Holdings taken over by the General Petroleum, as compiled by Mr. C. H. Gilman, are as follows: Nevada Midway, Serongo, Sybil, Oakburn, Foxtail, Brunswick, Logan, Midway Thirty-two, Eclipse, Essex, Buena Vista 32, Sunset, El Cerrito, Holloway, Elk Hills Division Bear Creek, J. M. K., H. H., Globe Exploration and Delaware Union. With the consummation of the Union Oil Co. deal this company will guide the destiny of the Producers Transportation Co. as well as the Producers Agency, as pointed out in the December number of the California Derrick.

The "Bulcon" war sings pretty small in comparison with the uprising in our sister "republic."

Spellacy-Jameson Letter—Hewitt Bill

The T. Spellacy-J. W. Jameson letter to Hon. Franklin K. Lane, begging interference in California pipe line affairs, is likely to amount to little, because the State has also been asked to take action on the same matter, and the Hewitt bill, proposing to give the State Railroad Commission control of pipe lines as public utilities, covers the same ground. The strange thing is that it could possibly be made out that the existing pipe lines are public utilities when they do a strictly private business, their oil being purchased outright before it is ever run through the company pipes. In this connection, it would be well to state that the producers transportation line is the only line doing the business of a "common carrier." The Oil World, at first hot-foot after regulation, when it perceived the shoe would pinch the Agency, viewed the move with cautious alarm. It makes a considerable difference whose ox is gored. The Hewitt bill is entitled as under:

"AN ACT Declaring Persons, Firms or Corporations Operating Pipe Lines for the Transportation of Crude Oil or Petroleum for Hire or Otherwise, to Be Common Carriers, Regulating Such Common Carriers and the Transportation Thereby of Crude Oil or Petroleum or the Products Thereof, and Providing Penalties for the Violation of This Act."

The bill has six provisions, the final being that fixing penalties for violating the other provisions of the act, violation being made a misdemeanor punishable "by a fine not exceeding \$1000, or by imprisonment in the county jail not exceeding one year, or by both such fine and imprisonment." The same covers "any person, firm or corporation."

Dangerous Suits Filed

According to the "Oil World", suit has been filed in the U. S. court in Los Angeles to try title of third parties to the holdings of the Southern Pacific patented 36 years ago. The action has been brought by Frank Pierce, former assistant secretary of the interior, representing Robert Armour and Burdette Chandler of Los Angeles, who claim the land under locations made in 1910 and 1911, and the Central oil company is named as defendant. The land involved is 640 acres, section 23, 2-11 in the Whittier fields, which has about 40 wells producing about 20,000 barrels a month. Hundreds of thousands have been spent in development and there are hundreds of stockholders interested in the property. The company has 2200 acres owned in fee but the portion mentioned covers the main developed portions.

The suit appears to be a most unequitable proposition amounting in effect to nothing more nor less than an attempt to grab some one else's property.

A second series of "friendly" suits has been filed in Los Angeles to test the validity of President Taft's withdrawal orders. The companies against which action has been taken are: Consolidated Midway, National Pacific, General Petroleum, Panama, Standard and other companies and individuals claiming interests in fractional section 30-12-23, Maricopa. The question now arises: "How friendly is a friendly suit that separates you from your friendly property, developed by your friendly money and producing a most friendly income?"

Mexico's 1912 Output

The oil output of Mexico for year 1912 is estimated

by U. S. Consul Thos. W. Bevan, at Tampico, to be 20,000,000 barrels. About one quarter of this amount was shipped to the United States. The value received was probably in excess of \$3,000,000. About 29 tank steamers are building in British shipyards at the present time for the Mexican trade alone.

German Petroleum Monopoly Bill Defeated by Socialists

The Imperial Oil Monopoly bill, designed to oust the Standard Oil Co. from Germany, has been defeated in the Reichstag. The Socialist center, to show its displeasure of the government, voted against the bill, defeating it.

S. M. Oilfields, Ltd., has completed its refinery in the Cat Canyon field. Capacity 3000 barrels per day.

Patents Recently Granted

The following recently granted patents of interest to the oil trade are reported expressly for the California Derrick by Joseph M. Nesbit, patent attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Underreamer, C. E. Fredericksen, San Francisco, 1,045,279.

Deep well pump, John Hahn, Los Angeles, Cal., 1,045,282.

Casing head, F. J. Moser, Kane, Pa., 1,045,314.

Well reaming implement, A. P. Buck and M. C. Benedict, Los Angeles, Cal., 1,045,670.

Adjustable casing spear, D. G. Monsees, Sedalia, Mo., 1,045,728.

Casing elevator, B. C. Williams, Maricopa, Cal., 1,045,764.

Swivel-jar wire-rope socket, J. E. Prosser, Tulsa, Okla., 1,045,883.

Pipe or tube cutter, William Thomas, Ramsgate, Toronto, Ontario, Canada, 1,045,884.

Deep well boring apparatus, J. H. Herman and B. J. Weger, Napier, New Zealand, 1,046,294.

Casing tongs, W. G. Jackson, Maricopa, Cal., 1,046,596.

Drill, T. F. Litaker, Fellows, Cal., 1,046,615.

Apparatus for distilling hydrocarbon oil, C. W. Turner, Brooklyn, New York, 1,046,683.

Casing elevator, W. W. Wilkinson, Orcutt, Cal., 1,047,472.

Saddle for attaching pipes to pipe lines, F. N. Smith, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 1,048,364.

Tubing for boring, Edgar Frankignoul, Liege, Belgium, 1,048,470.

Swivel for hoisting machine, A. C. Graham, Oilfields, Cal., 1,048,475.

Drill rod grab, J. W. Young, Fullerton, Cal., 1,048,650.

Drilling rig, A. C. Zierath, Los Angeles, Cal., assignor to Zierath Combination Drill Co., same place, 1,048,632.

Threadless coupling for pipes, G. W. Kern, Oil City, Pa., assignor to Oil Well Supply Co., Pittsburgh, Pa., 1,048,703.

Rog clamp, R. C. Kleffman, Ironton, Minn., 1,048,705.

Well drilling machine, R. C. Fagan, Spangler, Pa., 1,049,068.

Well boring tool, Alexander Rotinoff, St. Petersburg, Russia, 1,049,151.

THE STOCK MARKET

San Francisco

The stock market here continues as gay and lively as a country graveyard, with purchasers as eager to trade their money for stocks as is the average man to act as pall bearer to his best friend: In other words, the market is rather listless, especially as compared with 1910 and early in 1911.

As we go to press General Petroleum, Amalgamated, Associated and Pacific Crude are the only really "lively" stocks here. Associated is diddling between \$43 and \$43.50 again. General Petroleum varies from \$30.25 to \$33.00. Amalgamated is bid at \$82.50, likely to go higher. Pacific Crude is active around 70 cents. United is quite lively at same price, 35 cents. Palmer is down around 15 bid, 16 asked, with sales at the last figures. It is really a good time to buy oil stocks at present; quite a few of them are so much lower than their actual assets would figure on a realization at present share prices. Union Oil continues around \$92. Following is a list of quotations taken just prior to our going to press on Feb. 21st:

Company	Bid	Asked
Amalgamated Oil	\$ 82 50	\$.....
Associated Oil Stock	43 50	.....
Associated Bonds 5s	101 87½	.....
Claremont	55	.....
Coalinga Central	20	25
De Luxe	60	.....
Empire	35	.....
Illinois Crude .....	.....	05
Lucile	3 00	.....
Maricopa 36	33	.....
McKittrick	09	.....
Monte Cristo	75	.....
National Pacific .....	.....	03
New Penn. Petroleum	40	.....
Oreutt Oil	56	.....
Pacific Crude Oil .....	.....	65
Palmer	15	16
Pyramid	06	.....
Republic	15	.....
Standard Oil of Cal.	183 00	185 00
Sunset Monarch .....	.....	1 10
Turner	1 00	.....
Union	92 00	.....
United Oil	35	35
West Coast (pfd.)	90 00	.....
Wolverine	50	.....
W. K. Oil Co.	2 22½	.....

Los Angeles Quotations

Los Angeles maintains its interest in oil shares and the tone of the market is both optimistic and healthy. Following is the list of quotations on February 21st in our Southern metropolis:

Company	Bid	Asked
Amalgamated Oil	\$ 83 00	\$ 84 50
American Crude Oil Co. ....	.....	30
American Pet. Co. (pfd.)....	71 00	76 00
American Pet. Co. (com.)....	50 00	53 00
Bear Creek Oil & M. Co	72½	80
Calif. Midway Oil Co.	14	14½

Central	90	1 15
Columbia	75	80
Continental Oil .....	.....	30
Euclid Oil Co. ....	.....	30
Fullerton Oil	2 00	3 50
Globe	02	03½
Jade Oil Co.	06½	.....
Maricopa Queen Oil Co. ....	.....	30
Midway Northern	09½	10½
National Pacific Oil Co.	03½	03¾
New Penn. Pet. Co	41	.....
Olinda Land Co. (Oil.)	38½	41
Palmer Oil Co	15	.....
Perseus Oil Co .....	.....	06½
Rice Ranch Oil Co .....	.....	1 40
Trader's Oil Co.	69 00	.....
Union	92 87½	93 00
Union Provident Co.	104 50	105 50
United Petroleum .....	.....	105 00
United Oil Co	35	37
West Coast Oil (pfd.)	70 00	.....
Western Union	79 00	.....
White Star Oil Co	17	.....

There were no quotations on the 21st of the month on the following companies: Brokshire, Enos, Maricopa Northern, Mascott, Mexican Petroleum, Penn. Midway, Pinal, Piru Oil & Land, Section Six and Yellowstone. The latter is practically entirely off the market at present.

Dividends for January

January's dividends fell off from those of December, when the Standard made its million and an eighth dollars payment, but, the one great dividend aside, there is an increase in the payments by local companies, the total for the month amounting to \$679,140.08. The Mexican Petroleum's preferred pay't is no longer distributed every month, but will be paid quarterly, the next distribution coming due in March. Standard's quarterly payment of \$1,125,000.00 will be made made on March 15, having been recently voted by the directors. Had the Mexican Petroleum Pfd. payment been made in January the total for that month would have been in excess of \$750,000. As the company will pay something like \$240,000 in March (figured on past payments) on the preferred and \$300,000.00 on its common, it can be seen that the March dividends will surpass all the known disbursements to date. Probably totalling \$2,250,000. February payments are expected to be about the same as for the past month; not likely to be larger at any rate.

Following is the list of companies paying and the amount paid in January:

Amalgamated	\$ 50,000.00
American Petroleum (pfd.)	8,255.50
American Petroleum (com)	39,607.00
Caribou	8,070.30
Central	7,500.00
Claremont	4,500.00
Columbia Cons.	45,000.00
Continental	4,200.56
Euclid	17,000.00
Fullerton	30,000.00

Home	10,000.00
Monte Cristo	12,500.00
Mount Diablo	7,500.00
New Pennsylvania	5,000.00
Olinda Land	15,000.00
Paraffine	3,000.00
Peerless	25,000.00
Pinal	15,000.00
S. F. McKittrick	5,000.00
Sauer Dough	2,992.50
Section 25	20,000.00
State Consolidated	5,000.00
Traders	9,000.00
Union	184,753.60
Union Provident	91,403.02
United Petroleum	48,450.60
West Coast (pfd.)	10,408.00
Western Union	5,000.00
<hr/>	
Total	\$679,140.08

Agency's Refinery

At the last meeting of the directors of the Independent Agency, the sum of \$10,000 was set aside for the purpose of establishing an experimental plant, to be located at San Luis Obispo. The plant will "top" the Agency's oil, as mentioned in the editorial in the last issue of the Derrick. A single unit capable of treating 5000 barrels daily will be installed immediately, according to the reports given out, and other units will be added until the Agency has a plant of 60,000 barrels capacity daily, sufficient to handle their entire output of the present. This is the biggest step the Agency has yet taken. With the Associated erecting a million dollar refinery at Port Costa in San Francisco bay, and the General Petroleum already topping its oil and erecting a large new plant of 20,000 barrels daily capacity in Los Angeles, the sale of crude oil promises to soon be a thing of the past and residuum naturally, will entirely occupy its place as fuel; a tremendous economic saving. It may also be pointed out at this juncture that as time passes the Agency, to compete with the other marketing concerns, becomes more and more like the Standard Oil Company, in the matters of centralization of control and marketing its products. That the Agency may ultimately become a close corporation, and a most profitable one, is by no means impossible.

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Vol. 5

SAN FRANCISCO, CAL., MARCH, 1913.

No. 8

"GOD SAVE THE PRESIDENT!"



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WOODROW WILSON.
TWENTY-EIGHTH PRESIDENT OF OUR COUNTRY

Mr. Wilson Accepted the Most Responsible Position in the World with Splendid Courage and Straight-forwardness.

"I summon all honest men, all patriotic, forward-looking men to my side. God helping me, I will not fail them, if they will but counsel and sustain me!" (Inaugural address)

One of the honest men summoned to the President's side is Franklin K. Lane, of California, the new Secretary of the Interior. Mr. Lane's selection means a "Square Deal" to the West.

The Cementing Process of Excluding Water from Oil Wells As Practiced in California

(By Ralph Arnold and V. R. Garfias in Technical Paper No. 32, Bureau of Mines.)

Pump Method of Cementing

(Continued from February Number)

The procedure in connection with the pump method is as follows: After the space between casing and tubing has been filled with water and after the fact that the casing can be lowered and raised without difficulty has been ascertained, the casing is hung 6 to 24 inches above the bottom. A column of tubing, to the lower end of which is attached a reducer or T joint, is lowered to about 2 feet above the casing shoe and connected to the pump. Enough water is then forced down to indicate whether it will circulate freely between the outer casing and the wall of the hole; the water also serves to remove whatever slush or alkaline water remains in the well. Before pumping stops, the casing is lowered to the bottom to test whether the bond between the casing and the material upon which the shoe rests is water-tight and whether the casing leaks or not. If the casing is sound the pressure against which the pump is working will immediately increase.

Seven hundred pounds of cement mixed with about 16 barrels of water is sometimes enough for a successful cementing job in wells 900 to 1200 feet deep, whereas in other wells as much as 25 tons is necessary to protect the hole. The mixture is made in a shallow wooden tank and is pumped continuously until all has been used, when the pump is disconnected to allow the inserting of a wooden plug into the tubing. The plug is then driven down by additional pumping. The plug forces the cement ahead until it reaches the reducer at the lower end of the tubing and so drives all the cement to the outside of the casing. The pressure is kept constant while the casing is being lowered to the bottom, after which the pump is disconnected, the tubing pulled out, and whatever mixture remains in the hole is immediately removed with a bailer.

The cement is allowed to remain undisturbed for 12 to 14 days, when the tools are run in and the hole drilled out for about 10 feet below the casing shoe; then the well is allowed to stand undisturbed 15 to 24 hours as a final test.

In some wells drilled by the rotary method, it is advisable to pump the cement into the casing, which has been perforated for some distance above the rotary bit to allow the escape of the cement to the outside. The cement is then poured into the casing and forced down with a wooden plug propelled with the aid of the pump. The water below the cement passes through the perforations to the outside, the cement following. When the upper plug reaches the closed end of the casing all the cement has presumably been driven out.

In the best practice a pump capable of maintaining a pressure of 700 or 800 pounds per square inch is provided for use with the pumping method. Although this pressure is seldom required to force the cement in, the pump is powerful enough to overcome the difficulties that sometimes arise.

Use of The Cement Plunger

The cement plunger has been found very effective in the cementing of many wells. Among the advantages that can be claimed for it is that no tubing is required in connection with its use. The following description gives an idea of how the plunger is used.

After the fact that the casing is free and the circulation is established has been ascertained, the casing is pulled up about 2 feet from the bottom and about 10 barrels of clear water pumped in to wash out any slush or mineralized water that may have accumulated in the lower portion of the hole. The circulating head is removed and two iron disks, connected by a cast iron stem about 2 inches in diameter and 3 feet long, are placed in the casing. These disks have a diameter about three-fourths of an inch smaller than that of the casing. A ring of rubber belting attached to the rim of each makes it fit the casing snugly, and keeps the cement from forcing its way past and mixing with the water already in the hole. The mixture is pumped into the casing, forcing the disks down, and after the cement has all been pumped in, the cap on the circulating head is again removed and another iron disk put in similar to the ones already inserted, except for a cup shaped leather follower which fits snugly in the casing and is attached to it at the top. The cap on the circulating head is then put in place and water pumped into the well, forcing the whole column of water and cement down until the lower disk reaches the bottom of the hole, leaving the uppermost disk about 1 foot inside the casing. The pressure from the pump forces the cement past the pliable washer attached to the upper disk. The pumping is continued until the upper disk is forced down on top of the one already at the bottom; the leather follower attached to the top of this disk being cup shaped expands under pressure to the side of the casing blocking the discharge. The pressure gage on the pump immediately indicates that the cement is all out of the casing. Double assurance that the cement has all been displaced by the water may be had by measuring the water pumped into the hole after the cement. The bailer should be used in a couple of days to remove any cement that may have slipped past the disks at the inside of the casing. The disks being of cast iron are easily drilled out afterwards. The time required in this process for the cementing operation proper is only about 1 hour.

A description of the cement plug is also included in the Bulletin, accompanied by a sectional cut.

The Bulletin may be obtained free of cost by applying to the Director, Bureau of Mines, Washington, D. C.

Birch Oil Company, formerly Menges, in Brea Canyon, is in the oil formation at 3910 and 3760 feet, respectively, with wells No. 6 and No. 8. No. 5, the premier producer of 31 gravity in the State, is still making 2400 barrels per day. The new wells look like duplicates of No. 5, but have not yet been completed.

The Development of the Refining Industry in California

By LAIRD J. STABLER

Professor of Chemistry, University of Southern California, Los Angeles

The first oil refinery for refining California crude oil was built in Ventura in 1860. This refinery was very small. The stills were constructed out of old steam boilers after removing the flues. The only product manufactured was kerosene which was shipped to San Francisco and sold for \$1.50 per gallon. The crude oil used at the refinery was collected from the surface of the water flowing in the creeks in the canons near Ventura. The crude oil was hauled to the refinery in barrels and then distilled for the purpose of removing the kerosene.

This recalls the early history of refining paraffine oil in the east. You will remember the first kerosene was refined for medicinal purposes. They found it in a water well in New York state. They did not know what it was or what to do with it so the patent medicine men bottled it up and sold it as a liniment at a big price per pint, and for years the only use known for crude oil was for use in liniments for the purpose of curing rheumatism and similar ailments.

The Ventura refinery was enlarged to 60 barrel capacity. They started to manufacture asphalt for the P. & B. Paint Company. It seems that the first asphalt manufactured in California was for the purpose of manufacturing paint.

The second refinery was erected in 1884 by the Whiting Solar Oil Works at Newhall. The name of the refinery was later changed to the Pacific Coast Oil Refinery, and in 1888 the plant was removed to Alameda, and the finally sold to the Standard Oil Company.

This plant manufactured gasoline, kerosene and asphalt. It had a capacity of about 600 barrels. The stills were constructed on the cheese box type.

The next refinery was at Sata Paula, erected in 1888; it had a capacity of 600 barrels. The products manufactured were gasoline, kerosene, engine distillates and asphalt. This refinery was sold later to the Union Oil Company and moved to Oleun.

The next refinery was erected by the Los Angeles Oil Burning and Supply Company in Los Angeles. This was the first refinery erected in Los Angeles. It was erected to manufacture a distillate for the purpose of burning in cook stoves. The manager sent east and brought a man to Los Angeles with a patent oil burner. This refinery had a still capacity of 150 barrels. The only product manufactured was a stove distillate with a gravity of 50 degrees. After this refinery started to manufacture stove distillate the manager saw the opportunity of manufacturing asphalt. The first sale of asphalt from this refinery was made to McKee & Wilson, of Patterson, N. J. This firm ordered 1800 tons, which was used in dipping 60-inch steel riveted pipe. This pipe was used in the construction of a water main 56 miles long.

We are to note that the first asphalt made from California crude oil was recognized as a superior pro-

duct for the purpose of manufacturing paint and for dipping pipe.

The first stove distillate made was between 52 degrees B. and 40 degrees B. A few years later a distillate of 50 degrees B. was sold to take the place of gasoline in gasoline engines. I wish to call your attention to the use of distillate in gas engines. At this time gasoline was used only, and every manufacturer of gas engines said it was impossible to use anything heavier than gasoline. The price of gasoline was advancing and the price of distillate was going down. The gas engine manufacturer observed this fact and finally improved the carburetor so that the gas engine would run on 50 gravity distillate. A little later the carburetor was improved so that the engine would run on a 42 degree distillate. This improvement has gone on until some carburetors operate successfully on a 35 gravity distillate.

The first gasoline manufactured in the east was about 72 degrees B. The first gasoline manufactured in California was about 68 degrees B.; then the gravity of gasoline dropped to 62 degrees B. It was unsatisfactory to use 62 degree B. gasoline in automobiles or in gasoline stoves. The price of gasoline was going higher and the price of distillates going lower. The gasoline stove was improved as a result and a lower gravity of gasoline could be used with satisfaction. The carburetor on the automobile was improved year after year until a gasoline of low gravity could be used. I recently got gasoline from three of the largest distributors in Los Angeles and found it 58; on another occasion found it 60 degrees B., and another 56 degrees B. The gravity of gasoline today is an unsettled question. Many automobiles are using a mixture of gasoline and engine distillate.

The above brief history shows that "necessity is the mother of invention", and I believe that the automobile manufacturer must invent a carburetor that will use a gasoline that is 45 degrees B. or heavier. Think what it would mean if the automobile could use heavy distillate of about 42 degrees B. and buy this product at 4 or 5 cents a gallon. I believe it will not be many months before the carburetor using heavy distillates will be perfected.

The first asphalt made from California crude oil and used for paving purposes, was used on June 17, 1901. Five cars of this asphalt was shipped to the Brooklyn Aleatraz Asphalt Company, Brooklyn, N. Y., by steamer. It was not marked and it was taken into Brooklyn in such a way that no person except the company purchasing it knew where it was manufactured. It was used for laying 15,000 square yards of pavement on Cernuella and Fulton Streets around the city hall in Brooklyn, N. Y. Some of you have possibly seen this pavement. A few years later it was examined by experts and found better than the other pavement adjoining it, which had been made

from natural asphalt. At this date there was not a single city in the United States that would admit the use of alifornia asphalt made from oil. We could not use it in Los Angeles at that time. After this pavement in Brooklyn made such a good showing the city officials throughout the country slowly changed the specifications so that it could be used on certain streets, where the traffic was light.

From this date on the cities commenced to write their specifications so that it was possible to use the California Oil Asphalt. I think Omaha and then Denver were the first cities to use the California Oil Asphalt; then Los Angeles permitted the use of oil asphalt on certain streets where there was not very much traffic but on the streets of heavy traffic the Los Angeles engineers at that time thought the asphalt was not suitable for first class work.

About 1890 several refineries were started in Los Angeles; the Barber Asphalt Paving Company; Asphalt Oil and Refining Company; Southern Refining Company; Densmore-Stabler Refining Company; Union Consolidated; Los Angeles Refining Company; British-California; Atlas. Later the Amalgamated Oil Company constructed a topping plant. At this refinery a 50 degree B. distillate was removed from the oil from the Salt Lake Field.

These refineries were finding a market for their asphalt and it was not all being used for the manufacture of paint and pipe dip. They were shipping it into the cities throughout the United States under different names for paving purposes. You can see that was a long, hard struggle to introduce the oil asphalt. Large sums of money were spent in experiments and demonstrations to show the merit of the oil asphalt as paving material. Today the asphalt made from oil can be used in any city in the United States for paving purposes.

The refiner met many obstacles in marketing the distillates produced in the manufacture of asphalt. The refiner was not allowed to make gasoline or kerosene because he feared that the Standard Oil Company would object. The refiner had an idea that as long as he kept out of gasoline and kerosene, and simply made asphalt and distillates, the Standard Oil Company would not interfere with him very much.

In order to make gasoline and kerosene it was necessary to buy light oil, and when an independent refiner would go after this light gravity oil and

offer a fair price, he would find that before he could sign a contract with the producer that the Standard Oil Company had gotten in ahead of him and had closed a contract for the oil. For a number of years it was practically impossible for an independent man to buy light gravity oil.

Some producers would prefer to sell light oil to the independent refiners and would try to ship it to the refinery, but the producer could never get cars and when he did get a car it would be several months getting to the refinery. When the refiner did get a car of light oil and make a little gasoline and kerosene, and then try to ship it some place in Arizona, his car was lost; after he had shipped it from three to six months it would arrive and the man in Arizona would not need it. The Standard Oil Company had no delay in shipping their distillates to Arizona.

The independent refineries conceived the idea that if they bought their own cars possibly the railroad company would be compelled to haul them so the next move was for the various refineries to buy their own distillate cars, and they bought them and got along a little better. The railroad companies would return the empty car in the course of time to the refiner. The Standard Oil Company put every obstacle possible in the way of the independent refinery that made distillate or kerosene.

In the early days of refining it was thought impossible to make a satisfactory kerosene from California oil. The kerosene was blended with eastern oil. A few years ago the refiners learned how to make a satisfactory kerosene from straight California oil. Today the California kerosene is sold in competition with the eastern kerosene and it is claimed by some refiners to be superior. At one time it was thought impossible to make a lubricating oil from the California asphalt oil. Many of the refineries are making all grades of lubricating oils that are said to be superior to the eastern paraffin oils. One large refinery claims to make the best gas engine automobile oil on the market from California Oil. Studying the past leads me to believe the future has in store many brilliant achievements for the oil man.

* This very valuable article is substantially the same as the address given by Professor Stabler before the Southern California Section of the American Chemical Society on January 17 last. The remainder of the article, which is of a much more technical nature, will be published in the April number. These articles are appearing only in The California Derrick.

California Production for and Field Operations During February, 1913

Totals Smaller than January's

While the total production of the State during February is shown smaller than during January by close to 280,000 barrels, the daily output was actually in excess of the January daily output by 16,220 barrels of oil. Consumption fell off more than 850,000 barrels during the month, but the actual daily decline was less than 5000 barrels. As production increased and consumption decreased, surplus consequently mounted at the rate of 20,000 barrels daily, (round numbers) over the daily surplus during January. The reason for the seemingly large fluctuation is, of course, the shortness

of the month, which affects the totals surprisingly. It doesn't take many days to make a big difference in totals when the daily averages are ranging around 250,000 barrels.

The total production for the month of February was 6,667,029 barrels, or 859,483 barrels less than for January output. The total consumption for February was 6,667,029 barrels, or 859,483 barrels less than for January. The daily average production for February was 260,812 barrels, being within 2400 barrels of the highest daily average production on record, that for October, 1912. February's daily average, as compared with that of January, shows a gain of 16,220 barrels,

indicating that a considerable number of wells closed in recently must have been put to production again, unless the production of the big wells that came in in January and early in February was underrated; either of these conditions could bring about the increase, but it is probable that big wells are no more responsible than the resumption of operations by those who have been shut down, in increasing the output. Anyway, the results is the same. Stocks on hand now total 47,389,610 barrels.

Standing of the Various Fields

Midway continues its prodigious output, exceeding the January production by 4,331 barrels, and, in the daily average for February gaining over January daily average by 8070 barrels. Midway's output for October last, the greatest in its history is only about 100,000 barrels greater than that for February, would have been had February the same number of days as October. This indicates that some big wells were going during February as does the well average of 3292 barrels, which figures a daily well output of 117 barrels; a high average.

Coalinga made the second largest output, as usual, and although the gross figure was not as great by 24,705 barrels as for January, the output per day was 4288 greater, totalling 52,547 barrels. While Kern River fell below January's output there was an actual gain of 20 barrels per day for the field, the daily output for Kern being 31,590 barrels, in February.

Next in production comes Fullerton, with 22,949 barrels per day, a total for the month of 642,559 barrels, which is 15,175 barrels less than in January. The gain in daily production is 1732 barrels; Fullerton is interesting more and more capital as time passes and the field is very busy.

McKittrick's daily average increased from 18,750 barrels in January to 19,183 in February. This was not sufficient to offset the shortness of the month in the totals for the two months and February's total is there-

fore 44,254 barrels smaller than for the month previous. Sunset held its own by a small margin, increasing its daily output from 15,030 to 15,052 barrels. The apparent loss for the month is 44,474 barrels.

Santa Maria's daily output shows a gain of from 13,803 barrels to 14,050 barrels. The output for February was 34,493 barrels less than for January.

Following Santa Maria is Salt Lake with a total of 192,902 barrels for the month, a falling off of 6884 barrels. Salt Lake's daily average gained more than 400 barrels, the averages for the two months being: Daily average for January, 6448; February, 6889. Lost Hills made 8030 barrels less in February, but the daily average came up 291 barrels. From 5389 in January to 5680 in February. Whittier Coyote shows an increased daily output that could be nicely accounted for by one well. The daily averages are: January, 4126 barrels; February, 4390 barrels. The total production was 122,924 barrels, a "loss" of 4981 barrels from January. Santa Paula's total output of 69,745 barrels was 5261 barrels smaller than January, but the daily averages for the two months show a gain for February of some thirty odd barrels. Average daily production for February was 2455 barrels. Lompoe and Santa Paula run neck and neck in production. Lompoe's total for February being 66,500 barrels. This was a gain in the total of 4252 barrels and a gain in daily average from 2008 to 2375 barrels. Los Angeles remains about the same in daily average making 3 barrels more daily during February, but less for the month by 3052 barrels. The total being 29,468 barrels. Summerland's daily average was the same, 180 barrels. Puente's 81-barrel daily average in January dropped to 80 barrels daily in February. While Watsonville made 75 barrels per day during both months.

Following is our regular detailed statement giving a feature never before introduced, the daily averages which are worked out to within a half barrel for Derrick readers exclusively. No other publication undertakes to present the daily averages nor a review comparable with The Derrick's.

FIELD	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Daily Av. Prod. Ea. Field (To within 1-2 Bbl) January	February	Production for Month
Kern River		7	1,656	4		31,570	31,590	884,520
McKittrick	11	8	274	7	1	18,750	19,183	537,122
Midway	16	97	697	19	4	73,880	81,950	2,294,613
Sunset	3	36	263	2		15,030	15,052	421,456
Coalinga	8	62	899	8	1	48,259	52,547	1,471,328
Watsonville			5			75	75	2,100
Lompoe		1	19			2,008	2,375	66,500
Santa Maria	1	17	147	1		13,803	14,050	393,400
Summerland			122			180	180	5,040
Santa Paula	3	23	310	3		2,419	2,455	69,745
Newhall		3	67			302	279	7,800
Salt Lake	1	11	264	1	2	6,448	6,889	192,902
Los Angeles			400			1,049	1,052	29,468
Whittier-Coyote	1	17	145	1		4,126	4,390	122,924
Puente			56			81	80	2,240
Fullerton-Brea Canon	7	55	290	4		21,217	22,949	642,559
Lost Hills	5	16	55	7		5,389	5,680	159,034
Salinas Valley			1					
Repetto			1					
	56	356	5,669	57	8			7,302,751

Summary

	Barrels.
Stocks Jan. 31, 1913.....	46,753,888
Prod. February, 1913	7,302,751
	54,056,639
Consumption, Feb. 1913.....	6,667,029
	47,389,610
Stocks, February 28, 1913.....	47,389,610
Daily Ave. Production.....	260,812
Daily Ave. Consumption.....	238,108
	22,704
Daily Ave. Surplus	22,704

Mexican Eagle Oil Company, or "Pearsons," has completed plans for a refinery, the estimated total cost of which is given as \$3,000,000. "Pearsons" or El Aguila, is the big British competitor of Waters-Pierce and the E. L. Doheny Companies.

Standard's Emery No. 2, La Habra, continues its 1200 barrel per day output. No. 1 is said to be even bigger and with a tremendous gas pressure, so that the Company's wildcatting operation expenses in La Habra will be fully compensated by these two wells.

Interesting Developments of Recent Date in all the Fields

Report on Earnings, Dividends and Business of the Standard Oil Co. of California in 1912

In 1912 the Standard Oil Company of this State handled 27,649,844 barrels of oil, or at the rate of approximately 2,333,333 barrels per month. Of this amount they shipped or sold 21,533,837 barrels; they placed in storage 6,115,006 barrels. Of the total 47,000,000-barrel stored surplus oil in the State today, the Standard is credited with 31,000,000 barrels, as compared with 10,000,000 (round numbers) for the Union Agency, 3,500,000 for the Associated and 2,000,000 for the remaining storage. This shows, to a certain extent, the strength of the Standard in California today. The Company increased the capacity of its Pt. Richmond refinery, constructed the great El Segundo refinery as its southern base, built a third pipe line from the Valley fields to San Francisco, and expanded generally with wonderful rapidity.

The net earnings for the year 1912 totalled \$7,106,156. One dividend was paid, totalling exactly \$1,123,348. The remaining portion of the net earnings was set aside for future developments; for expanding the Company's market, increasing its facilities, developing new fields, protecting it against legal incursion of its present guaranteed rights under the laws of the State of California; and, for a fund against depreciation of "plant" as a whole. The company's surplus is given as \$20,000,000: round numbers. (Exact sum somewhat in excess of this figure). Cash on hand, or what may be termed "working balance" is about \$1,000,000. Exact balance slightly less. The present value of the stock of the company will unquestionably figure its present selling price: it is the best buy on the market today as the dividend rate is 10 per cent per year and the Company's future is undoubtedly a splendid one.

The Company will soon provide 800,000 additional steel storage at Pt. Richmond. During the past year its storage capacity was increased in proportion, approximately, to its excess oil. The wildcatting done by the Company in La Habra is now in the way of making big returns. Summary:—Condition splendid.

Status of General Petroleum Purchase of Union Oil Control

Upon the return of Mr. Eugene de Sabla from New York, about the middle of the month, the newspapers quoted Captain John Barneson, on the Union control purchase, as follows:

"Mr. de Sabla's trip east was taken solely for the purpose of financing General Petroleum and he has succeeded in every respect. On April 1 we shall make a payment to the Stewart interests on the purchase of the control of Union Provident of \$100,000, and four additional payments of \$100,000 each, every two months, making with our original payment of \$5,000,000, an even million. The financing is arranged for the next five payments and later the details of the subsequent financing will be worked out—you see we have two years to do it in."

Pipe Line and Other Legislation

Pipe line and other legislation having to do with the Oil Industry of California is not treated in this number because there is nothing definite, as yet, to report. (We are satisfied to let others make the laws). A "blue sky" bill will be passed; it will be a compromise. The pipe line common carrier action urged by Colonel Spellacy is being fiercely wrangled over in the State Capitol: Action of some kind will be secured, but exactly what, remains to be seen. Since the Interstate Commerce Commission has declared pipe lines are not common carriers and the issue has been passed up to the Supreme Court of the land for final decision, there may be some delay in legislation on this question. Still, the State of California may decide that it can declare pipe lines within its borders to be common carriers without giving any attention to the Federal Government's ruling on interstate pipe lines.

The appeal of the Mascot Oil Company to the State Railroad Commission for a reduction in the freight rates on shipments of oil in tank cars, which it declared through Colonel Spellacy in effect discriminatory, unfair and out of proportion to the service rendered, will be considered by the commission and the result chronicled in this publication. The Sutherland legislation will also be given attention if passed and signed. The Derrick has no representative in Sacramento and does not choose to publish the wild rumors that circulate as "stories" in the press. The facts are good enough for our readers—when they come to hand.

Agency's January Sales

Agency's sales for month of January totalled 1,250,000 barrels of oil. This is 50,000 barrels less than in December (according to our reports—others say it is 100,000 barrels more; we can't see it.) The net price received by producers was the same, 34 cents per barrel. The Agency's refining plant at San Luis is making good progress and the first "unit" it is expected, will be operating between June first and July first. When the plant is in full operation 30,000 barrels a day will be topped and the tops sold to the big refiners and distributors, while the Agency will fill its fuel contracts with the residual oil coming as a by-product. It was at first reported that the Agency would "top" fully 60,000 barrels per day.

Producers Transportation Company Status

Net earnings of \$1,303,191, a surplus of \$1,101,740 after interest on bonds and floating indebtedness was paid and a declaration of 6 per cent annual dividends to shareholders are the main features of the Producers Transportation Co.'s annual report. The net earnings are at the rate of 20 per cent on the total amount invested in plant, \$5,307,205. The Company handled 19,364,991 barrels of oil in 1912, and had 8,299,049 barrels on hand at the close of the year. The Union Oil Company owns 90 per cent of the stock of the Producers Transportation Company.

SIXTY-FOUR YEARS A PIONEER

MAJOR GUY H. SALISBURY



IN GOOD COMPANY

Sixty-four years ago, on March 11, 1848, Major Guy H. Salisbury pioneered life in the sense that he first tried it on that date, arriving at the bleak hour of four a. m. on Sunday morning in Buffalo, New York. Mr. Salisbury remarked that it was a cold day, adding that he knew perfectly what he was talking about because "he was there at the time"! Ever since that date Guy H. Salisbury has been a pioneer; as hardy, cheerful and noble a pioneer as ever lived. Once, in a pleasant conversation, the writer obtained the unpretentious chronicle of Mr. Salisbury's pioneering—only the briefest sort of sketch, but one abounding in interest.

"I left New York City," said Mr. Salisbury, "on January first, 1862, not yet fourteen years of age, for the momentous trip to California, the happiest pioneering I had yet undertaken.

"We came by water to Aspinwall (now Colon), disembarked here and railroaded across the Isthmus to Panama (oh, that railroad!) and thence to San Francisco by water—so you may see, my son, I have been in this magnificent country some time." (When one has pioneered life for sixty-four years, he can be excused for assuming a paternal tone.)

In July of 1863 the Major, then at an adventurous age, left the Golden Gate for Boise Basin, Idaho, but returned in the fall of 1864, saturated for the time being with Indian dodging and other wild west amenities. To vary living Mr. Salisbury became a "printer's devil" first, afterwards one of those who did the bedeviling. He worked on those early papers some of which are now only historic names, others of which are powerful factors today—"Mooney's Express," "The Golden Era", the "Youth's Companion" and the "Dramatic Chronicle" now the San Francisco Chronicle. The "old-timers" will recall the first named papers with lively interest.

In what a few words can a great period of development be swept before the eyes! Since Guy H. Salisbury has been on this Coast he has been a participant in its most interesting history. He has travelled from northernmost Alaska to South America and only recently visited New York—so changed that he recognized only the oldest landmarks. But this is tarrying; and tarrying is forbidden.

Mr. Salisbury kept on pioneering. He pioneered Matrimony, and developed a great vein of human happiness and love. To be ever in the front, he joined the gold rush to Alaska, leaving San Francisco on May 13, 1898, in a small two-masted schooner. Though carried out

with all the high hope and indomitable courage that characterizes him today, the venture was not a success financially and Mr. Salisbury returned to San Francisco—to keep on pioneering.

The oil industry appealed to the Major as an industry that was to experience a mighty expansion. Mr. Salisbury had a relative in the East who was connected with the Standard Oil Company in the early days of its success and this relative, so Mr. Salisbury told the writer, "had greatly interested me with his tales of the possibilities in oil. And as the 'game' began to move soon after I returned from the North, I took hold." He has been holding on ever since and has so tight a grip that Thomas Hayes says he is the best informed man in the whole Coalinga field, "bar none"; and that as a practical operator few men are superior to him in judgment, if indeed they are equal. Mr. Salisbury pioneered his way into the Agency, where he stands high today—as high as any.

Who, in Coalinga, doesn't know Guy H. Salisbury? It's a loss to the one who doesn't! But the Major is so busy these days that he hasn't a great deal of time for mere conversation. The real pioneer gets so busy developing that he can't always stop to talk. For instance, Mr. Salisbury has developed five secretaryships, all of which are bound up in his single person. With others, he is developing lands claimed by the S. P. Railroad. Then again, he has duties which were thrust on him as a "city father" of the progressive town of Coalinga. A pioneer just naturally has these bouquets thrown at him as he grows older and better known, as all the successful ones will vouch. Then again, he is the Live Wire of Coalinga. How little is heard of that town when Guy Salisbury is away! It is Guy who keeps the papers filled with the developments in Coalinga! It is Guy to whom the Geological Survey men, outside news writers, practical well operators—everyone who wants any kind of valuable information, turn in their need; and Guy it is, too, that pioneers them straight where they want to go. And lastly—and by no means the least—Guy H. Salisbury is a pioneer in the art of being a thorough gentleman and probably the most all around respected man's man that Coalinga is proud to claim as a citizen. California may be well proud to claim him too—and we know all his acquaintances, who are also his friends, if they are worth while, will wish him many more years pioneering; shall we say pioneering happiness? To whom is happiness due more than to our friend, Guy H. Salisbury? The Oil Industry of California, proud of its pioneers, joins us in saying: "Here's to you, Major!"

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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PAUL W. PRUTZMAN, - - - - - Consulting Scientific Editor
A. S. COOPER, - - - - - Contributing Scientific Editor

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The ***
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** Creed

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

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Our New President

The sane, level, quiet tone of the inaugural speech of President Woodrow Wilson, and the noble sentiments expressed in that speech, undoubtedly made a very strong impression upon the thinking and patriotic citizens of this country. There was no grandiose talk, no magniloquence; there was no "I, Woodrow Wilson, have come to deliver you poor peons from bondage" no extravagant promises—but this:

"I summon all honest men, all patriotic, all forward-looking men to my side. God helping me, I will not fail them, if they will but counsel and sustain me."

Is it too much to allow our patriotism to rise up in our hearts while we take off our hats and say:

"God save the president!"

* * * * *

Statistical Betterment

With this number the Derrick presents its readers with an even more complete statistical table than heretofore published, the new figures being the average daily production of each field for each month, the month under review being compared with that previous. While there is considerable work attached to this we feel that it will be appreciated, because, unless the daily average production is known, the bulk figures do not give an exact idea of each field's performance during the month, since the number of days varies with the months. The only way to keep a genuine tab on the ups and downs of production in each field is to give the daily average for each month. This betterment in service is in line with our policy always to do out best; and his "best" is all anyone can do.

* * * * *

Properties and Values of Coalinga Petroleum

An article by the distinguished chemist and petroleum engineer, Mr. Paul W. Prutzman, will be continued or concluded in the next issue of the "Derrick."

Our Sixth Year

Five years ago, March 20th, 1908, the first issue of the California Derrick made its appearance. Since then the Derrick has been published continuously, but has doubled up on several issues due to the death of the former editor on one occasion, to other causes later on, all of them pressing, such as the changing of offices, change of ownership and later the concentration of all the duties of issuing the publication, in one person.

In the five years past the Derrick has given the oil industry some very valuable technical matter. Illustrations are not lacking among the contributors to this publication. Our back files show the names of some of the foremost petroleum engineers, chemists, geologists and oil operators in the world. It is a matter of pride to us to know that men like Dr. Edmond O'Neill, Paul W. Prutzman, A. S. Cooper, (former State Mineralogist), Col. Timothy Spellacy, Dr. Ralph Arnold, Guy H. Salisbury, William Plotts, Dr. David T. Day, and other well known men of our time have been glad to write for us or to give us the data for use without restriction of any kind. The only authoritative article on refining California oil ever published was written by a chemist named Christensen and printed in the first number of the Derrick issued, which immediately placed the paper's status very high—where we have since tried to maintain it, through ill times as well as good.

When we look back on the past and see the remarkable series of valuable articles, technical, statistical and news, we are amazed that it could have been done with so little support as we once received. The files of the Derrick record the development, the monthly history of the oil fields of California, for five full years—the birth of whole fields, the petering out of others, the boom of 1910, the dull period that is only now being overcome, the marvelous rise of California to the position of the world's greatest oil country: All these things our readers and friends have found in this journal.

We have had the support of loyal advertisers or we could not have kept going during the hard period. We appreciate this support and that is why we make this public acknowledgement of it. We feel we deserve more and increasing business, because we have so earnestly tried to tell the truth about the oil industry, to make known oil's merit, especially for fuel on this coast. We have tried to warn against "fakers" and to support the good when financial inducements were not lacking to cause us to turn in the other direction. And this is appreciated. We know it is because we have the confidence of our readers and because our readers number the greatest, most reliable, most successful and progressive oil companies in California—and in the world.

* * * * *

Billion Dollar Preparation for Panama Canal Shipping

Remarkable preparations are being made by foreign countries, and those closely bordering our own, for the opening of the new short cut to commercial empire, the Panama Canal. If the foreign shipping now under construction in any index, Europe is even more alive to the new trade opportunities than is the country that makes them possible through the Canal's construction.

The most striking preparation for the Canal's opening is to be found in the harbor improvements under

Editorials (Continued Page 12)

With Neither FEAR nor FAVOR

The CALIFORNIA DERRICK makes its clear, brief, reliable and conservative reports, month by month, the year around—This issue beginning the Sixth Year of our Existence, so that **THE DERRICK** is the **Oldest Oil Publication in the West Today** and the **Recognized Final Authority on California Oil**. That is the reason **THE DERRICK** numbers as its Subscribers the greatest Oil Companies (representing more than **One Billion Dollars Realizable Assets**) in the World; not alone in California, but the **World Around**. The greatest Governments in the World are Regular Subscribers. Eminent Geologists, Petroleum Engineers, Petroleum Chemists, Fuel Oil Engine Experts, Company Presidents, Secretaries, Field Superintendents and **STOCKHOLDERS** find **THE DERRICK'S** reports **Absolutely Essential**. **THE DERRICK'S** Reading Matter is **Unique** for the briefness and reliability of its news reports and the recognized superiority of its technical articles.

We could not have outlived the Hardest Period known to the California Oil Industry—if we had not been **A NECESSITY** to those interested in that Industry. Our Subscribers realized the necessity of least **One** publication not affiliated with any single interest, but fair to all.

We Cover the Ground: BUT NOT WITH "BULL"

That is why we devote this Page to Advertising our Publication. We offer **You** Something **Worth While**. Read this issue through **carefully** and see if it doesn't bear out our statements. Then—and not before—we ask you to

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way at present or contracted for completion in the early future. The cost of these improvements, taken into combination with the improvements here at home will probably reach the stupendous total of one billion dollars. In addition to these harbor improvements as evidences of preparation for the new trade, there is not a single known shipyard in Europe that is not at the present time taxed to its capacity to turn out the merchant ships that the whole world is demanding—while the same thing applies equally here at home, according to the newspapers. In the British Isles alone, so Mr. Guy Salisbury tells us, there are more than two hundred Diesel-type vessels under construction at present—this within one year of the demonstrated success of the Selandia and Christian X. Mr. Salisbury, who has but recently returned from New York, where he met many English people, states that Great Britain, which has no oil, is wild on the subject, and that British money is ready to develop anything that shows a fair chance of return. This doubtless means that a great deal of British money will come to California when the new market that the Canal will give us is available.

Perhaps some of our readers would like figures showing what cities and countries are preparing for the Canal's trade opportunities. If so, we have figures compiled by a great Chicago journal that should be of decided interest to California and especially to the Oil Industry. The harbor improvements will reach, in the cities following, the sum placed after the city's name:

Montreal, \$17,000,000.; Toronto, \$18,000,000; Halifax, \$30,000,000; Chilean ports, \$20,000,000; Brazilian ports, \$125,000,000; Buenos Aires, (Argentine), \$27,000,000; London \$70,000,000; Havre, France, \$20,000,000; Boulogne, \$6,000,000; Victoria and Vancouver, a large sum, but not yet determined; Seattle, \$20,000,000; New York, \$85,000,000; Philadelphia, \$3,250,000; Boston, \$9,000,000; Los Angeles, \$5,000,000 to \$10,000,000; San Francisco, \$9,000,000; New Orleans, \$6,000,000; Port Arthur, Texas, \$2,000,000. The American cities will be helped by the Government to a large extent. These figures are approximates, not all of them being absolutely sure, but they are of interest because they show the world alive to the Panama Canal's opportunities. The expenditures will run over the next five to ten years.

But perhaps the most interesting point concerning this big preparation for the Canal, to the Oil Industry at least, is the number of ships that are burning oil, and carrying it. Tankers are being turned out very rapidly indeed. From London comes the news that in the last three years there have been completed, according to Lloyd's classification, fifteen oil-carrying vessels and nineteen other vessels constructed with oil fuel bunkers. Sixteen of these had complete oil-burning appliances. At present there are forty-five oil-carrying vessels and nineteen others being built with oil fuel bunkers. Forty-four of these will have complete oil-burning installations.

The demand for steamers carrying oil in bulk has enormously increased. Eighty-seven such vessels have been approved by Lloyds. It is reported that during the last year ships have doubled their earnings. Tramp steamships twenty years old and more have sold for almost as much as their original cost and put into service.

Oil Companies and Assessments

For the past year or more we have heard a great deal about assessments on stock of California oil companies and as we have expressed our opinion (complimentary and otherwise) regarding some of the companies, we wish to state our views regarding the assessments of one company that has done things a little "differently," and thus has attracted our attention pleasantly.

About three or four years ago a local firm of brokers promoted three oil companies, known as the Liberty Oil Company, Puritan Oil Company and Portland Oil Company, and in 1911, these three companies combined their assets and liabilities forming one company, known as the Combined Oil Company and a board of five directors were elected from stockholders of the three original companies. In a few months an assessment of one cent a share was levied to liquidate the indebtedness of the three original companies, after which a second assessment was then necessary to furnish capital for development purposes.

From what we can find out the property held during this time by this company was merely prospective as oil producing property and necessitated the expenditure of large sums of money and might or might not render the company successful as a dividend producer.

However, at this point in the history of the Combined a change was made in the directors and management of the company seemed to take on a new lease of life. A stockholder of one of the original companies, known to have considerable executive ability, was elected managing director, about April 1st, 1912, and the real success this company has made practically dates from the time he took office.

Since April 1st, 1912, the affairs of this company have been handled in rather a different manner than has been the experience of most oil companies, gradually eliminating the influences of the original promoters. The stockholders have been posted by regular reports every three or four weeks as to the exact condition of the company, and if we are not mistaken, it is the first oil company that has furnished its stockholders with a copy of the minutes of a stockholders meeting.

They levied two additional assessments which were fully paid by the stockholders; have taken over a perpetual pumping lease on forty acres in the North Midway field; have two wells producing and a third well now being drilled; have placed the company on a sound financial basis and have secured a contract for the purchase of their oil at a price which will eventually net the stockholders excellent returns on their investment.

We believe that if all of the California oil companies would handle their affairs along lines similar to that above mentioned and bring themselves into closer touch with their stockholders, thus permitting all corporate acts to receive the approval of the stockholders, there would be an entirely different story written regarding the oil industry of this State and a great deal less complaining about assessments.

Anyone can readily see that if it had not been for the assessments paid in on this company's stock, the original investment would have been lost and it is equally clear that these assessments would not have met with such ready response from the stockholders of this company as they did, had it not been for the clear understanding the stockholders have had of the business affairs of their company.

Publicity Insufficient

The cry being raised against any form of "Blue Sky" law by those hostile to any curb that would seriously deter looters from forming the fake kind of companies which have harmed the name of California from one end of the world to the other, should go unheeded. For ourselves, we trust it WILL go unheeded. To those who urge "publicity" as protection against fake companies, no more should be necessary than a mere reference to the past, showing how absolutely ineffectual "publicity" has been. For is it not a fact that California's mountains and plains could be plastered with charters of fake companies, born for no purpose but to loot the pockets of the credulous and uninformed; buried only when the more intelligent of the looted have finally forced action by the district attorney's office? Who can deny it?

We trust that there will be no czar-like power given to any one man to exercise for the determination of a company's fitness to succeed—but that some curb is necessary and that a law should be passed making it impossible for overcapitalization of any kind of corporation, must be recognized. Publicity usually starts when the newspapers perceive they can get no more advertising from promoters, the end in view being to wreck what they cannot further despoil. California has tasted of the fruits of "publicity," and they are indeed bitter: They may be likened unto those of The Tree—eaten to the utter sorrow of the Original Sinners.

The Derrick agrees with the Oil World that there is a positive necessity for a "Blue Sky" law; the Oil World seems to be the one other publication in the State having to do with oil that desires the enactment of such a law. But there are any number of SUPPLY

HOUSES that wish the law had been enacted in 1900—it would have saved them a vast sum of money.

* * * * *

The "Seaboard" Article

The article on the Seaboard Oil and Transit Company, appearing in this issue, was prepared only after much labor and painstaking. We trust that the many who have written concerning this Company will feel pleased at our effort in the matter, whether they are pleased with the Company's condition or no. We have done our best for them.

Pacific Crude's Present Condition

The Pacific Crude Oil Company, which started operations something over a year ago on its property in the big-well district in the Midway, rounded out dividends of more than \$231,000 by a payment of \$14,000 on March 10th. In the last year the company has received \$700,000 for its oil, which is declared 26 deg. Be, and is sold to the Standard Oil Co. at 55 cents per barrel, according to what appears reliable information. The contract with the Standard is for a maximum of 2000 barrels per day, which is being delivered to the full. Well No. 2 is making 1600 barrels per day, choked down through pipes from a production of easily 9000 barrels. No. 1 is now making about 400 barrels daily. This is the famous well that made the floods of oil from which the company's first big dividends were paid. The well was very spectacular and was photographed by a moving picture concern. No. 2, which is so well controlled, will probably be more profitable to the company than was No. 1. This company has a very pleasing record from the date of commencement of operations.

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PITHY PARAGRAPHS

Valuable News Condensed for the Busy Operator's Quick Assimilation

The Empire Republic and De Luxe Oil Company sale to W. P. Hammon, acting for English capitalists, has finally been consummated. The Guibersons and H. A. Whitley were the main holders. Consideration for the entire deal: \$1,125,000. Further details are private.

North American Oil Consolidated, recently reported sold to British interests) have signed their entire production, approximating 150,000 barrels per month, to the General Petroleum Company for a period of three years. Price per barrel, 33 cents.

General Petroleum Company's subsidiary, General Pipe Line Company, has completed tanks having 175,000 barrel capacity. Oil will be running into them by April 10, through the pipe line over the Tehachapi Mountains, bringing the first San Joaquin Valley product ever piped to Los Angeles, on or before that date.

The Union Oil Company has purchased a site about a mile east of Reno, Nevada, for the erection of a warehouse and several storage tanks.

Amalgamated Oil's No. 10, La Habra Valley, is making a splendid record: Between 2500 and 3000 barrels per day. It came in at about 1750 barrels per day.

Western Union Oil Company's No 51, Santa Maria, came in good for 500 barrels per day, about the beginning of the month, now making about 250 barrels per day. The well is located about a half mile southeast of the nearest producer on the Company's property, extending the production area that distance. The Company has 9750 acres, of which 1200 acres are developed. Financial condition is excellent.

General Petroleum's refining plant at Los Angeles is said to be progressing very rapidly. It will have a daily capacity of 20,000 barrels and will be equipped to do a thorough-going refining business, but at first will merely be used as a common topping plant.

Standard Oil's new building in San Francisco will be occupied by the Company on or about July first. The structure is one of the finest in the whole city from point of strength, utility and business—building beauty. It has a splendid site, is in the heart of the business section and has a magnificent view from the upper stories.

Mays Consolidated Oil Company's gusher in section 28, 31-23, Midway field, is making about 1000 barrels daily of high grade oil. Well under good control.

"Power from Kerosene" can now be derived in the ordinary type of gas engine. Kerosene's value will appreciate steadily from now on.

The American Smelting and Refining Company, at Garfield, Utah, is running four reverberatory furnaces on California fuel oil, using 1000 barrels per day. Fully equipped, they will use 1200 barrels daily. "Oil," say the authorities, "gives a steadier and higher heat than coal,"—hence the change.

Estimated amount of gasoline-from-gas and other gasoline secured by means of extraction processes, place the daily total at 25,000 gallons. It is said that the Union Oil Co., has finally decided to use its immense gas flow in the Santa Maria field; that the Company has ordered machinery to "squeeze" the gasoline to the extent of extracting an additional 25,000 gallons per day. Also that they will construct a pipe line to transport the product from the field to Port Harford. All of which has in it the essence of truth.

Petroleum Company's well No. 3 on the Gilman lease in La Habra Valley is still making upwards of 700 barrels daily of 26 gravity oil.

Standard Oil has established Brea as its Southern field headquarters for tools and supplies.

The well in the new pool opened near Santa Susanna, by the Petrol Oil Co., is holding up beautifully. The Company will drill three new wells at once. Rigs already erected. The new well is a "winner," making 40 barrels daily of 32 B. oil. The well is very shallow and experts predict a second Monte Bello pool—the richest little pool in the State, or at least in Ventura County.

The rumor that the Southern Pacific and Santa Fe railways would unite in building a pipe line from the Valley fields to Los Angeles, alongside the railroad tracks, is again rampant. It won't down. "Positive information" (Haw!) says, "The line has been fully decided on after two years discussion. It will save the railroads from hauling 30,000 barrels daily to Los Angeles, in tank cars." Like other rumors, this will be believed when it eventuates—and not before.

Universal Oil Company (Crocker-Cameron interests) has a monthly output of 100,000 barrels in Lost Hills. This is about two thirds the output of the entire field. Standard has 25,000, Associated 15,000 and the remaining monthly production is from smaller companies.

Kern Trading & Oil has 74 wells producing 170,000 barrels monthly in the Sunset-Midway fields. They keep between 30 and 35 strings of tools in constant operation. In the Coalinga field this Company has a well holding the 15 inch casing record; it is 1974 feet in length and weighs 138,180 pounds, or close to 70 tons. The well is located on section 3, 20-15.

Well No. 3 of Orange Oil Company, Brea Canyon, located near the Birch wells, making 1400 barrels per day.

The American Gasoline Company, the American subsidiary of the Shell or Asiatic interests of London, has procured a site in Emeryville for the location of a refined oil storage plant. The exact location is Dayle and Third streets. Standard Oil has a location at Powell

and Third. Nearby are plants of the Union Oil, Capitol Oil Refining Company, Balfour-Guthrie and Paraffine Paint Companies.

Maricopa Queen Oil Company has discovered a second sand, encountered at 2400 feet, from which the well is producing over 2500 barrels per day. The Maricopa Queen's property is located in Sunset, east of the Essex, Yellowstone, California King and other companies on the "flat." The excitement is intense.

FIELD REPORTS FROM COALINGA

By Guy H. Salisbury

Getting Control of the Water Problem

The water situation appears to be improving in this field; the Traders Oil Company, on section 24, 20-14, having been successful in shutting off the water that had broken in on several wells. J. Benson Wrenn, Manager, reports that he has found the casing pitted by the action of the mineral in the water. The company has pulled the casing and replaced it with a new string, and had no trouble in then shutting off the water. The Kern Trading and Oil Company has been successful in shutting off the water in several wells in like condition on section 25, 20-14. In one well that had gone to water, where in the first place the water had been shut off with 8 1-4-inch casing, the old casing was pulled and redrilled, shutting off the water with the 12 1-2-inch string. Eighteen tons of cement was used; a perfect job of cementing off the water has been secured. Other operators are meeting with success in their efforts to recover wells where the water has broken in.

New Well for Mohawk

The Coalinga Mohawk Oil Company, section 12, 20-15, is hauling lumber and material out for well No. 7. The derrick and rig will be a heavy one; 88-foot derrick and one of the heaviest rigs built in this state. These heavy rigs will stand the strain of deep drilling, saving time and being in the end far cheaper than the lighter rigs usually built but that almost invariably require rebuilding before a deep hole is completed. These rigs will require about 45,000 feet of lumber and timbers. The rigs over wells No. 5 and No. 6 have demonstrated that to be a fact. The oil on this property is light, from 24 to 28 gravity, and in refining breaks easily, making it a desirable oil for refining. Well No. 5 is about 3,000 feet deep with 10-inch casing; casing free and going.

Quicksilver Mining a New Industry

The King Quicksilver Mining Company, section 19, 23-16, Kings County, is driving a tunnel into the hill in a due west course, has 276 feet of tunnel work done. Some of the drilling has been through very hard blue sandstone; they will top the vein about 150 feet from the surface. Showings in the face of the tunnel, at present, indicate a softer formation. C. W. Warner is the manager of the property, A. A. Lewis, superintendent. Mr. Wm. Gray, of Toronto, Canada, is financing the development. As soon as sufficient ore is in sight a Scott furnace is to be erected and the ore treated and the mine worked to its full capacity.

United Development Company

The United Development Company, section 17, 20-15, is 1800 feet deep on well No. 2, with 12 1-2-inch casing. Well No. 1 in section 17, 20-15, and wells No. 1, No. 2 and No. 3 on section 19, 20-15, are producing; the company has two 1,250 barrel iron tanks ready to ship the oil and has a pipe line completed to one of the marketing companies lines.

California Counties' Kettleman Hills Well

The California Counties Oil Company, section 4, 24-19, Kettleman Hills District, has resumed operations on well No. 1. The casing and tools were hung up on this well at about 4,000 feet, 8 1-4-inch casing; this string will be loosened and carried down to a hard formation where a good landing can be made. The heavy 6 1-4-inch casing will be used to prospect further in this formation. Light oil is looked for at this depth.

Hydraulic Drilling Company

The Hydraulic Drilling Company, northwest section 12, 21-14, it is reported, will resume operations at an early date. The hole started in the northwest corner of the property with a rotary rig will be converted into a full standard rig and the well finished up with standard tools. The derrick has been strengthened and prepared to be rigged up, and is now ready for a deep hole. Mr. Goodyear is in charge of the property.

Progressive Oil Company

The Progressive Oil Company of Coalinga, operating on the south line of section 34, 20-14, is 150 feet deep with the 12 1-2-inch casing in well No. 2; the bit is about through the hard shell that overlies the formation, about 56 feet thick, and of a lime rock character; after this the drilling will be much easier.

Coalinga Rig Shipped to Oklahoma

A heavy star rig was shipped from Coalinga a few days ago for Gotibo, Kiowa County, Oklahoma, by Burrell Jesse and H. L. Eibe, who are reported to have secured a good lease on 500 acres of prospective oil lands, and will at once develop the same.

K. T. O.'s Fine Well

The Kern Trading and Oil Company, section 11, 19-15, have finished up a well on the south line near the center of the section, at about 1,900 feet. The well has started off at a production of about 800 barrels, or better. The oil will run from 20 to 21 gravity, free from water and silt.

Little Jack Resumes

The Little Jack Oil Company, section 26, 25-18, has resumed operations on well No. 1; is now drilling.

Report on Seaboard Oil and Transit Company

Government Investigation Means Complete Reorganization---Effect of Action Taken by United States is Protection to Stockholders

(By C. C. WRIGHT)

As a result of a complete investigation of the Seaboard Oil and Transit Company by the Federal Attorney's office in Los Angeles, the shareholders of the company are afforded hope for a return on their investment. More than two thousand shareholders are interested in the company.

The company's books have been examined by agents for the government and upon the basis of this investigation the company will be reorganized. If there are any notes against the company which should not have been issued, it is believed these will not be honored. Notes against the company for large sums, alleged to have been given in the purchase of several parcels of land said to be unequal in value to the amount of the obligations will, if possible, be reduced to the amount which actually should have been paid for such parcels. The company's properties will be retained and so far as possible worked and developed. All this will be accomplished provided the present program of attorneys for the largest creditors of the company, and the policy imposed by the Federal Attorney's office, is followed out.

Executive expense has already been cut to an attorney's fee, the secretary's and stenographer's salaries and office rent. The secretary's salary is \$150 a month, a small sum considering the large amount of work to be accomplished by the holder of that position; the stenographer's salary is \$75 per month and office rent is also \$75 per month. The total executive expense outside the attorney's fee, which is not known to the writer, is \$300 per month; which, for so large an organization, is unquestionably very low. The offices formerly occupied cost \$190 per month. The present offices are located in the Wilcox Building, Second and Spring streets, Los Angeles.

The outstanding indebtedness of the company, exclusive of amounts due on contracts of purchase of property, will probably not exceed \$75,000, according to attorneys who have carefully investigated the company's affairs. Of the total indebtedness a large portion, not yet determined, is in notes of the company, which are apparently bona fide, but not actually so in some cases, if certain of the investigators are correct in their findings. Attorney Louis P. Boardman, representing the largest creditors of the company, who is making a very strong effort to conserve the company's entire holdings for the shareholders, so that the company may be a success and gradually pay off his clients, while at the same time getting a firm foundation on which to build its future, states uncompromisingly that certain notes were evidently issued without receipt of full consideration or that they represent values not actually received by the company, but constitute promoter's commissions in the purchase of some of the company's properties. These notes, he declares, make one of the chief burdens under which the com-

pany staggers. It is being bruited around Los Angeles that the company's former counsel, Attorney McClure, also one of the directors, since resigned, and William Moore, promoter of the defunct United Canadian Company, are trying to shift the responsibility for the company's troubles onto President Riggins and Mr. Nichols; whereas it is pointed out that McClure, as the Seaboard's attorney and Moore, manifold promoter, are not in a proper position to cast reflections. Messrs. Riggins and Nichols have stuck by their posts, working faithfully for the company's interests ever since the storm broke and have acted in a most admirable manner under trying circumstances. It is publicly stated that they were mislead into believing that the properties they were accepting for the company in exchange for the notes were worth the face value of the notes, some of which have now come into the possession of innocent purchasers. As to this, the writer has, of course, no knowledge.

It can be easily seen what a difficulty the company faces on this item: if the notes are to be paid the company's shareholders must sustain the indebtedness, if they are not paid, innocent purchasers lose their money.

The shareholder's meeting held in the assembly hall of the Phelan Building, San Francisco, in the latter part of February, was called by a committee previously appointed by the same shareholders. Attorney Boardman, already mentioned, addressed the shareholders and explained the absolute necessity for reorganizing or rather, virtually reconstructing the company. As has been said, Mr. Boardman represents the largest shareholders of the company. Acting for them, he attached the properties of the company to secure their demands. When the properties were thus tied up the shareholder's meeting was called and the actual condition of affairs as far as possible made known to those present. The result of this meeting was the election of a committee of three, which selected a representative of the shareholders present at the meeting to work in conjunction with the Los Angeles directors and the stockholder's advisory board. There have been several joint meetings of the latter board, the board of directors as now constituted and the creditors, the latter being represented both in person and by attorneys. The result is declared to be that all are working harmoniously to secure the preservation of the company's assets and the protection of stockholders and creditors alike. Two new directors have been elected to the board, these being Mr. C. L. Flack, an attorney of good standing in Los Angeles, who is interested heavily in the Gate City Oil Company, which property is now controlled by the Seaboard and under contract for purchase; and a Mr. Nairne, one of the shareholders, also of Los Angeles. A meeting is to be held within a very few days of this writing to elect new directors and decide on steps of immediate importance towards the

conservation of the company's properties to the shareholders.

Of the company's various holdings, the Mexican properties hold out the most hope for the shareholder at the present time. It is said that Col. Timothy Spelacy, his associate J. R. Thompson and other oil men who operate both in California and Mexico, have stated publicly that these properties are excellent prospective oil territory. The company has sub-leased 500 acres of its Mexican lands and the well on this property is said to be doing very nicely, being down 1450 feet on the last day of January, the latest date from which any news has been received, as the Mexican railroads are badly torn up by the rebels at the present time.

It is now proposed that the shareholders and the creditors unite in appointing some well known oil man of unquestioned character, to go to Mexico accompanied by a representative of the U. S. District Attorney's office of Los Angeles, the latter also to be a practical operator of known probity, for the purpose of looking over the properties, obtaining the opinions of those operating nearby, and, in short, making a thorough investigation and later a full report on both to the District Attorney's office and to the shareholders. These Mexican properties are well located according to high authority but this step will give the shareholders something definite that they may consider truly authoritative.

The producing properties of the company at present, as far as can be determined by the writer, are the Gate City, located at Maricopa, making 9000 barrels per month of road oil; the Madison in Kern River, making about 3000 barrels per month; the Section Six, in Kern River; the Yellowstone in Kern River, making about 3000 to 4000 barrels per month; the Templor Ranch, in Templor, making about 1500 barrels per month; the Yellowstone in Sunset. The total production is not known to the writer at this time. The Gate City is located next to the Fulton in Maricopa and can produce much more oil than at present. It is a 22 acre property. There is room for more wells on the Gate City and the Madison and by drilling to a second sand believed underlying both these properties, it is expected their output can be doubled. The "Madison" lease is ten acres. It adjoins the "Yellowstone" ten acre property. The "Section Six" lease is also a ten acre holding. Its production is said to be pretty low. The Templor Ranch property is said to be in very good condition. In the last year it has paid \$15,000 on existing indebtedness to the Climax Oil Company, out of its production. Wells are shallow and, in a limited territory, sure. A new contract has just been entered into by the several companies interested in the lease for the management and operation of the property by H. H. Argue, by which the proceeds are to be applied directly to operating expense and the liquidation of the balance of the indebtedness against the property.

The amount due on the purchase of the Gate City is said to be \$77,500 to \$80,000. The Gate City's oil is at present bringing 4 5cents per barrel and will bring from 50 to 65 cents this summer for road purposes, according to Mr. Boardman.

The exact proposal of Creditor's Attorney Boardman is:

To have the company turn over its entire resources to the Merchant's Bank and Trust Company of Los Angeles, to be held in trust pending the reorganization

of the company and the successful operation of its properties.

To have the legitimate claims against the company turned over to the same institution, to be held against the company until satisfied.

To have all indebtedness scaled to its actual value.

To have intelligent and absolutely reliable production men take charge of the properties and build the company through building up its production by developing them to their full efficiency.

Finally, in case the Mexican property proves to possess its promised merit, as determined by the government expert and the expert to be selected by the new board of directors, to develop the Mexican properties as far as finances will permit.

One of the conditions imposed, and a principal declared at all the meetings of the creditors and shareholders, is that unless the Mexican property proves to be of the required merit and the properties in California can be developed and operated profitably, the board of directors will not advise any further development work but that the facts will be duly published and the affairs of the corporation will be closed. In other words, the shareholders will not be lead to believe there is anything in store for them if such is not the case. Assessments will not be levied to pay off creditors and let the company's shareholders be out that much more money with no hope of a return. The company will develop if its properties promise success; otherwise its affairs will be wound up.

A meeting of the board of directors will be held on March 25th. The present directors are: C. L. Flaek; Messrs. Nairne and Gray, selected by Los Angeles stockholders; J. R. Riggins, now president, and Allen G. Nichols. Both of the latter signified their purpose of resigning several months ago. It is thought probable that C. L. Flaek will succeed Mr. Riggins as president.

Present necessary operating expenses of the company are being defrayed by money secured from a portion of the product of the company's wells, by consent of the attaching creditors and of the companies to whom royalties are due.

(Note:—No personal letters to the editor about this company will be answered as the foregoing article gives all the information obtainable at this time.)

With the formation of the Franco Petroleum Company, which takes over the holdings of the Franco-Wyoming Oil Company, The Dutch Maatschappij Petroleum and the Natrona County Pipe Line & Refining Company, control of the Casper, Wyoming, oilfields falls practically into the hands of a great Parisian syndicate, or at least of the French people, since French capital also controls the Midwest Oil Company, the one other big company of the district. The Midwest handled over a million barrels last year. The combined resources of the other companies are not known to the "Derrick" at this time.

Suit seeking to oust the Standard Oil Companies of New York and New Jersey and the Magnolia Petroleum Company and Corsicana Petroleum Company of Texas, from the State, and to recover penalties aggregating \$36,175,000 from the four companies named and twenty-five individual defendants, was filed in the Eighth District Court on March 6th. Violation of the Anti Trust laws of the State of Texas are alleged.

THE STOCK MARKET

Stock prices remain about the same, but some improvement is noted. Associated is selling higher, due to the announcement of dividends; Amalgamated is not so very far from par now, at 88.25 bid. A glimpse at the following reports will show the market's exact condition without further writing:

San Francisco Quotations

COMPANY	Bid	Asked
Associated Oil	\$ 45.00	.....
Claremont	60	.....
Coalinga Central	20	.....
Coalinga National	17	.....
De Luxe	60	.....
Empire	35	.....
Illinois Crude .....	.....	05
Pacific Crude Oil	30	40
Pyramid .....	.....	07
Republie	15	.....
Sterling	1 12	.....
Turner	1 00	.....

The San Francisco market is not very active. Off the exchange General Petroleum is changing hands quite actively. Los Angeles is livlier, if quotations are any index.

Los Angeles Quotations

COMPANY	Bid	Asked
Amalgamated Oil	\$ 88 25	\$ 88 75
American Crude Oil Co .....	.....	30
American Pet. Co. (pfd.)	70 00	76 00
American Pet. Co. (com.)	50 00	65 00
Bear Creek Oil & M. Co.	70	79
Calif. Midway Oil Co	05	07
Central .....	.....	96
Columbia	85	95
Continental Oil .....	.....	30
Eucled Oil Co. ....	.....	25
Fullerton Oil	2 00	3 50
Maricopa Northern	03½	.....
Midway Northern	09¾	.....
National Pacific Oil Co	04	04¼
Olinda Land Co. (Oil)	39¾	.....
Penn. Midway Oil Co.	07½	.....
Rice Ranch Oil Co	1 00	1 30
Trader's Oil Co. ....	.....	70 00
Union	90 87½	91 00
Union Provident Co.	99 50	100 00
United Petroleum	98 00	.....
United Oil Co.	34¾	.....
Western Union	76 00	.....

February Dividends

Following is a list of dividend payments in February:

Amalgamated	\$ 50,000.00
American Pet. (pfd.)	8,255.50
American Pet. (com.)	39,607.00
Caribou	8,070.30
Central	7,500.00
Claremont	4,500.00
Home (Coalinga)	10,000.00
Mount Diablo	7,500.00
Pacific Crude	7,000.00
Paraffine	3,000.00

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PETROLEUM ANALYSIS
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San Fran.-McKittrick	5,000.00
Sauer Dough	2,992.50
Section 25	20,000.00
State Consolidated	5,000.00
Traders	9,000.00
Union	148,753.60
Union Provident	91,403.02
United Petroleum	48,450.60
Western Union (spec)	15,000.00
West Coast (pfd.)	10,408.00
Western Union	5,000.00
Total	\$542,440.52

The March Payments will eclipse these disbursements by about \$1,500,000.

January and February Exports from San Francisco

Following are the amounts of oil exported and prices received for same for the months of January and February. January's shipments extra-heavy. It will be noted that the exportation of crude is at present time down to nothing, its place having been fully occupied by residuum. Table follows:

Articles Exported	JANUARY		FEBRUARY	
	Quantity	Dollars	Quantity	Dollars
Crude	210	4	.....	.....
Illuminating	8,474,311	388,974	4,973,724	233,144
Lubricating and	.....	.....	.....	.....
Paraffin	66,629	10,116	66,521	10,921
Napthas, Gasoline,	.....	.....	.....	.....
etc.	8,390	1,614	22,540	4,127
Residuum, Gas Oil, and	.....	.....	.....	.....
Fuel Oil, etc.	18,480,950	299,891	6,134,576	102,459
Totals:	27,030,490	700,599	11,197,361	350,651



For and Against Common Carrier Legislation

HEWITT BILL BRINGS UP MANY QUESTIONS OF VITAL IMPORTANCE TO CALIFORNIA OPERATORS AND PIPE LINE OWNERS

Various Opinions As to Its Constitutionality, by Proponents And Antagonists

The present campaign to have all the pipe lines in California declared common carriers naturally finds its foremost advocates among those not owning pipe lines, but having need of them. Col Timothy Spellacy and J. D. Thompson are probably most active in the effort being made to pass the Hewitt Bill, (referred to in a former issue of this publication), which will declare private carriers subject to a State Commission's direct regulation as regard rates, etc., and will open them to the use of any and every operator. Col. Spellacy and Mr. Thompson are pushing the measure in Sacramento with utmost vigor. They have engaged Francis J. Heney, of San Francisco graft prosecution fame, to represent them. In a speech before the Judiciary Committee of the California State Senate, Mr. Heney declared that the Standard and other big marketers were closely allied and in effect gave it as his opinion that the only way to save California from the domination of the Standard was to declare all pipe lines common carriers, as per the Hewitt Bill.

The General Petroleum Company, (acting for the General Pipe Line Company, its subsidiary), the Union Oil Company and the Producers Transportation Company, through representatives, all presented arguments against the Hewitt Bill. Neither the Standard Oil Company nor the Associated had any representative at the meeting of the Judiciary Committee to express their views, either favorable or hostile. It will thus be seen that the opposition to the bill comes from those supposed to be the closest friends of the producer at large.

The arguments presented in favor of the Hewitt Bill by its staunchest supporters, as copied from their literature, are as follows:

They state that the independent producers, by which is evidently meant those not allied with ANY organization, are "at the mercy of the pipe lines;" that the pipe lines have the right of eminent domain, citing the fact that the Producers Transportation Company exercised this right, and pleaded that it was a common car-

rier in order so to do, when obtaining a right of way across private lands; that the Producers Transportation Company "declines to handle the oil of those whom it does not desire to;" that this Company owns the pipe line from the West Side fields to Port Harford; that it is the transporting agent of the Independent Oil Producers Agency and that as such its stand against the Hewitt Bill is inconsistent.

Following out the arguments against the pipe lines being privately controlled (though privately constructed), the attempt is made to show that the Associated Oil Company's two pipe lines are to a certain point subject to the domination of the Standard Oil Company, (which they term the "Oil Monopoly"). In endeavoring to display a connection the following assertion is made: "The Associated Oil Company, owned by Southern Pacific Railroad Company and linked to Standard Oil Co. through well known and admitted interlocking directorates." The insinuation is made (in literature under discussion) that the Standard Oil Company is behind the General Petroleum Company, which has the Union Oil Company under option and which "owns the only oil pipe line from the Mid-California fields to oil markets of Los Angeles." The average cost of producing fuel oil is claimed by the proponents of the Bill to be thirty-five (35) cents per barrel: and they state that "it sells in San Francisco and Los Angeles for 75 cents." They claim, further, that the pipe line companies can transport the oil to San Francisco from the Valley fields for 8 cents per barrel and to Los Angeles for 5 cents: that they offer the producers 35 cents (cost of production per their figures.) That the railroad transportation rate is 42 cents per barrel, making impossible competition with those owning pipe lines. (This rate will undoubtedly be reduced.)

Reference is made to the profits of the Producers Transportation Co. for 1912, which it is averred are no less than 33 per cent. The charge for transportation being given as 17 1-2 cents per barrel. This line was built supposedly to aid the Independent Oil Producers Agency, but the inference the common carrier proponents make is that the company is earning too much to benefit the Agency members as it might be expected to.

While the pipe lines are all within the boundaries of California, much attention is given to early reports of the Inter-State Commerce Commission, the protagonists of the Common Carrier Measure, believing that such reports will have great weight with the State Legislature, bearing, as they do, on conditions elsewhere in the United States. But no mention is made of the recent decision of the United States Commerce Court, which nullified as unconstitutional the act of Congress designed to force the obligations of Common Carriers upon the pipe lines of the East, which decision was rendered early in March and was concurred in by three out of the four Commerce Court Justices hearing the case. In this case the Government's "monopoly" arguments were entirely unavailing, the Court holding that "nothing which these petitioners are doing or have done amounts to a violation of the anti-trust law." The "petitioners" were the pipe lines petitioning the Court to be relieved of the obligation of Common Carriers.

The Standard Oil Company, it is pointed out, has never exercised the right of eminent domain, owning outright the land on which its pipe lines are laid. The same is true of the Associated Oil Company.

As stated, the General Petroleum Company and the Producers Transportation Company are not in favor of the law. President St. Clair of the Producers Transportation Co. and Independent Oil Producers Agency, testifying in effect in Sacramento that the measure was impractical because of the different gravities of oil that

would have to be transported for the different producers, and for other reasons.

Views of several of the most prominent oil producers of the State are as follows:

Henry Ach, president of the Monte Cristo Company: I will tell you right now that the proposed bill making pipe lines common carriers is unconstitutional and will not be upheld."

John M. Wright, president Peerless Oil Company: "The bill to make pipe lines common carriers is unconstitutional and I believe it a 'gallery' measure. The constitution of the State and the United States guarantees a man his property. I have nothing further to say but that if the bill passes, it won't stand." (Quoted Verbatim.)

Mr. Ach is one of the brainiest attorneys in the State and his long association with the oil business should make his opinion valuable. The same is true of Attorney John M. Wright. On the other hand, no one doubts or can doubt the earnestness and integrity of those pushing the measure.

The "Derrick" reports these views without prejudice or bias of any description.

Common Carrier-Pipe Line Bill Passes Assembly — Special to the Derrick, April 30.—As we go to press we learn that by a vote of 64 to 1, and without debate, the bill declaring all oil pipe lines common carriers has passed the assembly. Assemblyman Schmilt of San Francisco cast the only vote against it. Assemblyman T. D. Johnston of Contra Costa County gave notice that he would move the reconsideration of the bill immediately.

California Production for and Field Operations During March, 1913

**Greatest Production and Consumption Month In History of California Oil Industry—Consumption
Reaches Eight and One-Half Million Barrels and Stocks Are Drawn From At Rate of
Twelve Thousand Barrels Daily**

Both in production and consumption of oil the month of March broke all previous records. Consumption exceeded production by almost 400,000 barrels, reaching the mammoth total of 8,578,230 barrels, or at the rate of more than 100,000,000 barrels per year! The output, which has only the production of October, 1912, as a near rival in size, totals 8,184,098 barrels. Thus the daily average production was 264,026 barrels while the consumption reached 276,717 barrels per day, so that the marketers drew on stocks at the rate of 12,691 barrels per day, a total of 393,421 barrels for the month, the largest reduction in storage for a long time past.

Market Expansion Means Advance In Price to Producers

The rapid strides in the market, which must be ascribed to the low price of fuel oil, have apparently developed that market to a point where either development in the fields must be stimulated by an immediate raise in price to the producer, or where stocks will have to be drawn on more and more heavily. Even at that, as stocks are drawn on, the value of oil will raise.

The marketer's own efforts, combined with the great demand for petroleum products that has developed with gasoline and oil engine, have produced a demand so huge that oil men are now asking themselves how they are going to supply the same, especially if the rate of increase is maintained. Over 8,500,000 barrels consumed in one month and less than 47,000,000 barrels above ground. This is the situation California faces today. Oil men here in San Francisco are predicting sixty-five cent fuel oil at the well by September of this year. That is an advance of 30 cents per barrel over the present price for crude fuel oil. If the increase in consumption continues the advance will be fully justified and is considered certain by many of the largest and most experienced oil producers in the state. Not only this, but certain producers give it as their belief that without a great deal of activity the producers as a whole are not going to be able to maintain the present production rate. The situation may therefore be considered very bright for the producer.

The average daily production, as compared with February, shows a relatively small gain of from 260,812

barrels to 264,026 barrels, as chronicled. The gain in consumption is from 238,108 barrels to 276,717 barrels, or 38,609 barrels daily. Quite a number of producers do not believe that April will maintain the consumption figures of March but it is conceded that the April demand will run well along towards 8,000,000 barrels. This will keep the producers more than busy.

Standing of the Various Fields

In gross production every field in the state shows an increase over February's output, as, of course, the greater number of days in March would cause such to be the case. In their average daily output, however, a number of the fields show a slight falling off, as our daily average column displays. A slight gain in daily output is noted in the Kern River, Lompoc, Santa Paula, Salt Lake and Whittier fields; and a comparatively large increase in the daily output in Sunset, Lost Hills and Santa Maria. A daily decrease of 500 odd barrels in McKittrick, of 600 odd barrels in Midway and 200 odd barrels in Coalinga, shows how these fields

stood. One well could easily account for this difference.

The only other field where a decreased yield amounting to anything was apparent was Fullerton, where the daily output was smaller by 324 barrels. Our new feature, the daily average production of each field, shows exactly where the fields stand in this particular.

Rigs, Wells Drilling, Etc.

There were 78 rigs completed in March, compared with 56 in February. On increase of 6 is noted in the number of wells drilling. The increase in the number of wells on production is from 5669 to 5784, or 115. (A similar increase can be expected among the producers in April as many wells are being put back on the producing list which have recently been shut down.) There were 54 completions in March, 3 fewer than during February. Abandonments numbered only half as many as during the preceding month. Following is our regular statement, giving all the details known:

FIELD	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Daily Av. Prod. Ea. Field (To within 1-2 Bbl) February	March	Production for Month
Kern River	1	5	1,652	2		31,590	31,630	980,530
McKittrick	7	12	285	8		19,183	18,610	576,901
Midway	30	108	722	14		81,950	81,314	2,520,729
Sunset	6	38	270			15,052	17,125	530,875
Coalinga	4	61	914	8	2	52,547	52,324	1,622,059
Watsonville			5			75	75	2,325
Lompoc		1	27			2,375	2,710	84,010
Santa Maria	2	16	166			14,050	14,790	458,490
Summerland			122			180	170	5,275
Santa Paula	8	22	318	6		2,455	2,512	77,886
Newhall		1	67			279	275	8,514
Salt Lake	6	9	285	3		6,889	7,401	229,439
Los Angeles			400			1,052	1,052	32,620
Whittier-Coyote	1	16	145	1		4,390	4,810	149,120
Puente		1	56			80	80	2,480
Fullerton-Brea Canon	4	55	291	5	2	22,949	22,625	701,377
Lost Hills	9	15	59	7		5,680	6,522	202,179
Salinas Valley		2						
Repetto								
	78	362	5,784	54	4			8,184,809

Summary

	Barrels.
Stocks Feb. 28, 1913	47,389,610
Prod. March, 1913	8,184,809
	55,574,419
Consumption, March, 1913	8,578,230
	46,996,189
Stocks, March 31, 1913	46,996,189
Daily Ave. Production	264,026
Daily Ave. Consumption	276,717
Daily Ave. Shortage	12,691

March Exports From San Francisco

March exports of petroleum products from San Francisco, while gaining some ten million gallons over the shipments during February, are not as great by six million gallons as the January exports. There were 21,091,010 gallons of all kinds of oils shipped in March, valued at \$577,371. In February the shipments were but 11,197,361 gallons valued at \$350,651. The January shipments were as follows: shipped, January 27, 030,490 gallons, valued at \$700,599. The shipments of illuminating oil in March totalled 7,552,665 gallons, as compared with 4,973,724 gallons exported in February and 8,474,311 gallons in January. Thus far this year, to the end of the first quarter, exports of illuminating total 21,000,700 gallons valued at \$968,334. The exports of lubricating oils show quite a large gain in March over both February's and January's shipments. Lubricating shipments in January amounted to 66,629 gallons; in February to 66,521 gallons and in March to 81,513 gallons. The value of the January shipments of lubricating was \$10,116; February's exports brought \$10,921, and for March the return was \$10,547. Showing a slight fluctuation in prices. The total lubricating and paraffin shipments for the first

quarter amounted to 214,663 gallons valued at \$31,584. Shipments of naphtha and gasoline for the first quarter total only 50,865 gallons, valued at \$8,959; the home market for these products is too great to permit large shipments. Total shipments of crude for the quarter under review amounted to only 260 gallons, valued at \$8. The place of crude has been occupied, of course, by residuum, gas oil, etc., shipments of which rank as follows: January, 18,480,950 gallons; February, 6,134,576 gallons; March, 13,436,847 gallons. Total shipments 38,052,373 gallons, or 906,009 barrels, valued at \$619,736, at something over 60 cents per barrel.

The annual business meeting of the Associated Oil Company and its proprietary and affiliated corporation will hereafter be held in San Francisco and not, as until the present in Oil Center, the "metropolis" of Kern River.

Standard Oil has abandoned its well on the P. Yriarte lease in La Habra Valley. The lease cost \$15,000. The well is said to have cost \$70,000. No results were secured.

Interesting Developments of Recent Date in all the Fields

The Le Roy Oil Company, capitalized at \$100,000 has been formed by M. C. Hunter of Spokane, Washington, to operate on 2, 21-14, Coalinga (the shallow district). This Company will be operated in conjunction with the Berkeley-Coalinga, Spokane-Coalinga, and Washington Oil Co.'s, all of which are under the same field and general management.

Well No. 6 of the Western Mineral Co., on section 22, 11-23, far out on the Maricopa Flat, is reported to have entered a light grade oil sand. If so, much development will probably ensue, as a very large area may then legitimately be looked upon as proven oil land. Further news awaited.

The "W. O. Oil Company" is the name of a corporation capitalized at \$500,000, having E. L. Ohmstead as president and Geo. W. Walker as vice-president, R. W. Kenny, W. G. Willard and B. Hartfeld complete the directorate. The Company will operate an 80 acre lease contiguous to the Walker-Brand Oil Co.'s property in section 19, 3-19, La Habra.

The Home Oil Co. has brought in a well in East Whittier at a depth of 3900 odd feet, that proves the existence of a prolific oil sand deeper than heretofore obtained. The oil is about 20 degrees in gravity and the well did better than 200 barrels per day when first tried out. The formations passed through are described as so difficult to negotiate that, with the depth, this cannot but have a deterrent effect on any hasty drilling here.

Pacific Gasoline Co., which has its plant on the property of the Birch Oil Co., in the Brea Canyon field, will move its outfit to the valley below its present location, where space is available to expand its operating apparatus. The concern now operates eight Bessemer and two Laidlow engines, its output of gasoline being 4000 gallons daily, all obtained from gas coming out of the Birch gusher.

Ventura Notes

Duluth, Minnesota, capitalists have taken over the Oil Creek Oil Company's lease and material, and have acquired 900 acres by purchase, (the Riva Rancho.)

The White Star Oil Co. is preparing to operate.

Kimball Oil Co., two miles east of Fillmore, is reported down about 200 feet in oil bearing shale.

Diamond Valley Oil Co. is reported to have a splendid well in its No. 2, located at the entrance to Modelo Canyon. Well is said to be good for 70 barrels daily. Gravity 21 deg. Be. Oil is reported to be flowing over the casing, "running to waste." The productive stratum was reached between 800 and 900 feet. It is rumored the Company will lay a pipe line from its wells to the railroad at Piru.

Piru Monarch, operating about a mile past the Dia-

mond Valley Well, is down 2900 feet in a promising formation.

Captain O. J. Stowe, who brought in a good well recently at Santa Susanna, has leased 1500 acres in the northern part of the Porter ranch, near San Fernando, and will begin operating immediately.

The Bard Oil & Asphalt Co.'s well No. 35, located on the Company's property near Santa Paula, got into a new, productive stratum between 2300 and 2400 feet, early this month. The gravity of the oil is reported 27 degrees. Well has not yet been completed but is being drilled deeper into the formation. The location of this well is on the north flank of Sulphur Mountain and the discovery will be of great interest to a large number of people.

SPELLACY-THOMPSON COMPANIES

Premier

The Premier Oil Company is now "stirring up the property" according to Mr. J. D. Thompson, our informant, "with the intention of increasing the production." Mr. Thompson further stated: "As you know, the Premier Oil Company oil is sold by the Producers Agency and is now bringing about 34 cents per barrel. We have not been trying to produce much oil from this property on account of the low price, feeling it is better to keep the oil in the ground than to sell at such low figures. It now looks as though the price would improve and I think from now on you can look for a materially increased production from this property."

Mascot

"The Mascot Oil Company has made a contract with the Union Oil Company for six months at 34 cents per barrel. The property is now in operation." We might add that the Mascot employs quite a large force; its production is a heavy grade oil and comes from 39 or 40 wells located on Twenty-Five Hill, Midway. The output is between 40,000 and 45,000 barrels per month.

Cresceus Oil

The Cresceus Oil Company has not made any contract for the sale of its oil as yet, states Mr. Thompson, and for this reason is closed down temporarily.

Mexican Premier Oil Co.: Mentioned in another column.

Assessments

Ramona Home Oil Co. has assessed the outstanding capital stock 1 cent per share, delinquent May 3rd and to be sold May 27. Sespe Consolidated Oil Co. assessment of one-half cent per share: delinquent May 13; to be sold June 10, 1913. Both companies have their place of business in Los Angeles. Other assessments are: Marian Oil, 2 cents; National Pacific, 1 cent; Traffic Oil, del May 20, \$2 per share; Hanford Sanger, 3 cents; Panama, 1 1-2 cents.

"Lacy" Tanks Will Stand the Test.

PITHY PARAGRAPHS

Valuable News Condensed for the Busy Operator's Quick Assimilation

The Chicago & N. W. Ry. now has 131 locomotives burning oil from the Salt Creek, Wyoming oil fields.

Announcement is made that the Franco-Petroleum Co. will in the immediate future construct an additional plant in Casper, Wyoming, with a daily capacity of 5000 barrels. The plant will be located near the Midwest Oil Co.'s refinery.

The Wyoming Pure Oil Company, with a capital of \$4,000,000, one million preferred stock and three million common, has been incorporated under the laws of the State of Wyoming, to develop 5000 acres of land in the Salt Creek fields of Natrona County, Wyoming.

Oil Production of Canada during 1912 was 243,336 barrels, or 47,756 barrels smaller than 1911. Value of 1912 output, \$345,050.

The Board of Directors of the Prairie Oil & Gas Co., has decided that that Company will temporarily discontinue payment of dividends, its earning to be used for betterment of every division of its business.

The statement of Standard Oil of New York, made to commonwealth of Massachusetts, gave its assets Jan. 1, 1913, as \$94,191,338. Assets consist of real estate, vessels, stock, cash, stocks and bonds and debts receivable, and stable equipment. Capital stock of corporation \$15,000,000; accounts payable \$16,151,713; floating indebtedness, \$3,653,227; surplus, \$59,386,337. —Quite a statement!

Two 1000-h. p. 4-cylinder Carels Diesel engines, the largest in the United States, have been purchased by Phelps-Dodge & Co. for use in one of their Arizona mining properties. The engines will use 0.48 lb. of oil per bhp-horse-power hour. It is said that oil will come from California.

A large field for kerosene oil engines has been developed in India, where this type of power has come into great favor for irrigating plants.

The eighth annual meeting of the Natural Gas Association of America, will be held May 20, 21, and 22, at Cleveland, Ohio. Many very valuable and interesting papers having to do with the gas business, will be read, and much good entertainment will be provided.

Board of Directors of The Galena-Signal Oil Co., of Franklin, Pa., a former Standard subsidiary, has voted

to increase the common stock of the company from \$8,000,000 to \$12,000,000, the increase to be distributed as a stock dividend.

Gulf Oil Co., has increased its capital stock from \$15,000,000 to \$60,000,000.

Standard Oil Co.'s chances for remaining in business in Missouri appear dead. The only hope the Company has lies in a petition for a rehearing of the ouster suit decided against it, which petition is being considered by the Supreme Court of Missouri at present time.

According to C. E. Jamieson, State Geologist of Wyoming, the oil production of 1912, was approximately 2,228,000 barrels, compared with but 275,000 barrels for 1911. All that holds production is refinery limitations. Thirteen thousand barrels per day can be produced in the Salt Creek field, but the refinery capacity at present is but 7500 barrels. There were 76 oil and 11 water wells drilled in Wyoming in 1912. Four dry holes were also drilled. Preparations for drilling in practically every field in the state as soon as spring arrives, are underway by many companies.

Oil has been discovered in a number of places along the Hoh River in Washington, on a site near the ocean, between Cape Flattery and Aberdeen, in a heavily timbered country. The oil is paraffinous. The Olympic and Jefferson Oil Companies, controlled by Seattle capital, own large tracts of land here and are said to be operating at the present time.

The gross earnings of the Midwest Oil Co., of Casper, Wyoming, for the month of March were approximately \$180,000. The Company has just declared a \$160,000 dividend on its preferred stock. The Midwest is constructing another refinery, which when in commission will bring up the daily capacity of the company to 11,000 barrels. The new plant will be completed by October 1.

Th shortage in gasoline supply is being felt all over the earth. Professor Wm. T. Magruder of Ohio University, holding chair of Mechanical Engineering, recently stated before the American Society of Mechanical Engineer, that "our annual output of gasoline is sufficient to operate continually, at their rated load, only five per cent of the gasoline engines now sold and in operation." This statement based upon the statistics "published by the Bureau of mines and other reliable sources" makes the howl against gasoline prices look ridiculous since the demand is so much greater than the supply. The professor predicts that "kerosene oil will come into very great and general use (as a power raiser) in the next few years."

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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Statement of the Ownership, Management, Circulation, Etc., of The California Derrick, published monthly at San Francisco, California, required by the Act of August 24, 1912.

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Business Manager, Charles Carroll Wright, 643 Phelan Building.

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Known bondholders, mortgages, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities. None.

CHARLES CARROLL WRIGHT.

(Signature of editor, publisher, business manager, or owner.)

Sworn to and subscribed before me this 26th day of March, 1913.

(Seal)

EDITH W. BURNHAM,

Notary Public in and for the City and County of San Francisco, State of California.

My commission expires January 30, 1914.

The ***
*Derrick's
* * Creed

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

The Oil Industry is one of the few really great industries of this country that does not fear Tariff Revision. It stands on its own legs.

* * * * *

"Sixty-four cent fuel oil by September," is what some of the producers are saying.

* * * * *

The reports of the three great marketing concerns show the greatest earnings in their history. "One man's loss is another man's gain."

* * * * *

Eight and one-half million barrels monthly consumption means that Mr. Drill will soon have to resume extreme activity: One hundred million barrel consumption annually will necessitate the same production at least; and how small that 47,000,000 barrel surplus looks now!

* * * * *

The oil publication that has recently declared for making "the fuel oil business which includes production, transportation and distribution a public utility," demanding that the business be placed "in the hands of the State Railroad Commission for regulation," is probably viewed as revolutionary, socialistic and

oppressive any proposal that a State Commission should be placed in charge of its business. It makes a very considerable difference whose ox is gored.

* * * * *

Professor Stabler's Article

The Derrick is pleased to announce that while we are unable to conclude in this issue the valuable and instructive article begun by Professor Stabler in the March Review, we will publish it at an early date, as the professor has promised the balance of the copy "in the near future." The remainder will be a practical discussion of the refining methods in use in California today.

* * * * *

Troubles California Operators Know Nothing Of

The report of a conference of State Geologists, representatives of the U. S. Bureau of Mines, State Mine Inspectors, coal, natural gas and petroleum well operators, held in Pittsburgh, Pa., February 7-8 and March 11, 1913, outlining desirable legislation which may be developed in legal form in each State to meet special local conditions, is lengthy indeed, and emphasises the fact that California operators have many advantages which they do not appreciate because their time is too closely taken up in cursing water, legislation and other matters, like transportation. It appears to us that operators here can be very thankful there are no coal mines under their property, owned by other persons than themselves. The oil wells interfere so seriously with the mines, or vice versa, that legislation has been prepared which will make drilling in coal mine territory a burden that a well developed horse would shudder at attempting to carry. There will be inspectors to see that the wells are drilled according to statute and plat, and that wells passing through coal mines are made water and gas proof, etc. As it is all for the safety of the mine workers it is undoubtedly only humane and necessary; but nevertheless the California operators may very well congratulate themselves that this one condition, at least, is lacking in California.

* * * * *

"Petroleum in Southern California."

Under date of April 17, F. McN Hamilton, State Mineralogist, sent out a circular letter stating that the State Mining Bureau has issued a book covering the oil fields of Ventura, Los Angeles, Orange, San Bernardino and Santa Barbara Counties.

The notification of the issuance of the book was of a most perfunctory nature, doubtless because the work of writing it was done a long time back and under another State Mineralogist. No boquets are wasted on a description of the contents of this most valuable volume—without question one of the most valuable volumes that ever came out of the State Mining Bureau. However, this much at least, is said:

"The book *** gives a history of the development of the fields and describes wells and operations in the different localities. It gives various methods of analysis of typical oils in the several fields.

"The book contains 430 pages, cloth bound, is well illustrated and is accompanied by six maps of the different fields. The price of this publication has been fixed at \$1.50, with an additional 22 cents for postage, and may be obtained by applying to the State Mining Bureau, Ferry Building, San Francisco."

"Zerolene" is Vouched for by the Standard Oil Company

We regret that this letter reached us too late to allow us to review the book for such of our readers as are seriously interested in gaining conservative and valuable information of the fields "covered" in the volume. While the long delay in the publication of this book may detract somewhat from its value as a reference guide to the latest discovered pools, the information furnished is of so staple a nature that the book must be considered standard and will doubtless take its place on the shelves of every corporation and individual interested in the fields discussed.

* * * * *

No More Annual Kicks

After a 26-year campaign the United States Geological Survey has received generous recognition at the hands of Congress in the authorization of an expenditure of \$2,596,000 for the construction of a fireproof building "of modern office building type of architecture." With this sum it is proposed to erect a building on ground already owned by the Government which shall accommodate, besides the Geological Survey, the Reclamation Service, the Indian Office, and the Bureau of Mines, all bureaus of the Interior Department, whose work is closely related to that of the Survey and among all of which there is more or less constant cooperation. The justifiable annual "kick" in the Director's report will be lacking "henceforth and forever."

* * * * *

Sutherland's Water "Protection District" Bill

On April 17 Assemblyman Sutherland's oil land protection bill, providing for the formation of "oil protection districts" for the purpose of co-operation in pre-

venting infiltration or the intrusion of water upon oil bearing strata, was passed by the State Senate at Sacramento and sent to Governor Johnson for final action. The bill, known as Assembly Bill No. 52, was opposed by a delegation of independent oil men. Advice is that it will become law without further ado.

* * * * *

But It Is Not All In California

Approximately 4,750,000 acres of public lands, valued chiefly for oil and gas, have been drawn from public entry by executive order. The Geological Survey recommended the withdrawal of more than 1,333,000 acres of probable oil reserves in fiscal year of 1912 alone.

Mexican News Notes

Mexican advices state that the Waters-Pierce Oil Co. has obtained a gusher making 25,000 barrels per day. The well is located in the Topila field, a little north of the East Coast Company's gusher. Depth 2500 feet.

The Mexican Premier Oil Co., the Spellacy-Thompson corporation, is down 2350 feet. Considerable heavy gravity oil has been found in the hole thus far, but at the present time operations are held up pending the arrival of a string of pipe to complete the well. The officers believe she will be a good producer.

The Mexican Petroleum Company's Directors have raised the dividends on common stock from 4 per cent to 6 per cent per year. Par is \$100. This will bring up the quarterly payments on common to \$534,625. The quarterly for common and preferred combined will now be \$783,625. Books on common close May 10; dividend May 31.

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Annual Financial Statements of California's Great Oil Corporations

The Union Oil Co. has issued its official financial statement covering year 1912. The material figures of same were published in February "Derrick."

Annual Report of the Associated Oil Company and Proprietary and Affiliated Companies

The annual report of the Associated Oil Company, distributed April 26, shows the company to be, as far as can be judged, in a most excellent condition as was indicated by recent dividend declaration of \$600,000, and by the disassociation from this corporation of several of the old regime who are generally credited with having used the company as a private stock market feature to father their own bank rolls. Those days are past. Today the Associated Oil Company is on a business basis never before approached by the corporation. The book value of its stock is in excess of par, \$100.00. The company's capital assets are shown to be \$68,595,321.81. Its business in 1912 totalled \$16,170,967.06, which is certainly a good showing for a corporation capitalized at \$40,000,000. Business earnings, after deducting all operating expenses, were \$3,992,128.16, or nearly 10 per cent. A large depreciation reserve was written off, same totalling \$1,828,526.58. Taxes and interest on bonds totalled \$933,157.45, leaving balance "to profit and loss" of \$1,230,444.13.

During the year the Company increased its storage by 1,523,000 barrels, the total storage on December 31, 1912, being 8,106,616 barrels. The Company took over all the assets of its subsidiary, the Associated Transportation Company, during the year, these assets being the pipe lines, sailing vessels and business of the Transportation Company. A reduction in administration "and other expense" was thus effected. The report notes the loss of the steamer Rosecrans, insured for \$250,000, and the fact that all vessels and their cargoes are now covered by insurance. Also, that plans have been completed for a new tank steamer of 62,000 barrels capacity, to be delivered about the middle of 1914.

The Company refinery plans are referred to as follows:

"Since January 1st, 1913, construction has been commenced on a new refinery at Avon, on San Francisco Bay with a capacity for handling 10,000 barrels crude oil per day. It will manufacture gasoline and engine distillate. The plans of the refinery are arranged so that extensions to the plant can be readily made for the manufacture of other products, should we determine hereafter to engage in such manufacture. It is expected that this plant will be ready for operation before the close of the year.

"Both of our pipe lines from the San Joaquin Valley oil fields pass through our refinery site and will serve the refinery. The main lines of the Southern Pacific and Santa Fe companies cross the property, which also has a deep water frontage for a wharf, construction and cost of which is included in the plan for handling our business. Supply of refining oil for the operation of

this refinery is provided for by our oil purchase contracts and from the production of our own properties. The cost of the Avon refinery and of the new steel tank steamer, will aggregate about \$1,750,000 and provision has already been made for these payments without borrowing or selling bonds."

The report further states that the Company's sinking fund retires their bond issue within the limit of twenty years from date of authorization, and that re-organization of the Administrative and Field Departments during the year effected a reduction of \$100,000 per year in the pay roll, "with increased efficiency." It is further stated that: "It is believed that the Company will not need any new financing in 1913."

In 1912 the Company completed 4 wells in Kern River, 3 in Lost Hills, 2 in Midway and 1 in McKittrick. Active drilling has been resumed in 1913 and the Company's production for March of this year is 33,000 barrels greater than for corresponding month in 1912.

Proprietary companies are the Associated Supply Company, with assets of \$108,984.22 and the Bakersfield Iron Works, with assets of \$255,306.99.

Affiliated corporations are the Pioneer Midway Oil Company, Sterling Oil & Development Company, West Coast Oil Company, California Coast Oil Company, Amalgamated Oil Company, Arcturns Oil Company, Salt Lake Oil Company of California. The Associated's floating equipment owned April 1st, 1913, consists of three steamers of over 4900 tons burden each, and of a capacity in excess of 50,000 barrels each; 1 steamer of 875 tons and 9880 barrels capacity; 1 iron ship of 1737 tons and 16,814 barrels capacity; 1 bark of 1809 tons and 19,160 barrels capacity; 2 schooners of 1854 and 979 tons respectively and capacities of 19,408 and 11,120 barrels respectively; 3 tugs, 1 steel and 2 wood.

The assets of the Associated and connections follow: Associated, \$68,595,321.81; Associated Supply, \$1,042,697.13; Bakersfield Iron Works, \$423,400.83; Pioneer Midway, \$2,431,299.30; Sterling Oil and Development, \$737,605.31; West Coast Oil, \$1,804,539.35; California Coast, \$78,331.77; Amalgamated Oil, \$7,255,965.77; Arcturns Oil, \$1,181,760.24; Salt Lake Oil, \$1,817,066.94.

Annual Meeting of Independent Oil Producers Agency

The annual meeting of the Independent Oil Producers Agency was held in Bakersfield April 9. The business conducted included the election of officers, election of the Executive Committee, the admittance of new members to the organization, election of the Agency's directorate, the reviewing of the Agency's business condition and other minor matters.

The old officers, consisting of President L. P. St. Clair, Vice-President Stanley W. Morshead, Secretary W. B. Robb and Treasurer M. V. McQuigg, were unanimously reelected.

Those elected to constitute the Executive Committee were: Col. Timothy Spellacy, Harry W. Thomas, Thos. A. O'Donnell, M. L. Requa, S. A. Guiberson, Jr., W. L. Stewart, H. U. Maxfield, Geo. A. Scott, R. S. Hazeltine, H. H. Welch and W. W. Cohn.

The new companies and individual operators admitted to membership in the Agency were: Strong Oil Company, United Development Company, Oil Exploration Company, Miocene Oil Company, C. M. Hazard, Carbo Petroleum Oil Company, M. G. and P. Oil Company, T. W. Company, W. T. and M. Company, Frank Evans, T. J. Manley and J. D. McGinn, Alberta Midway Oil Company, Combined Oil Company, March Oil Company, Boston Petroleum Oil Company, Hondo Oil Company, Midway Peerless Oil Company, Dominion Oil Company, Homer Oil Company, Traders' Oil Company, Traffic Oil Company, Rambler Oil Company, Kern Four Oil Company, Paraffine Oil Company, Wilbert Oil Company, Bellinglea and Umbrun, Shandon Oil Company.

New stockholders in the Agency are as under: T. M. Young, L. A. Wright, H. E. Wright, F. L. Lezinsky, W. W. Colm, Frank R. Strong, G. J. Hanson, B. A. Hayden, W. R. Wardner, M. H. Whittier, F. N. Smith, Frank Evans, N. M. Crossett, C. A. Rodgers, E. E. Garrett, Martin Coyne, A. H. Billinger, C. M. Hazard.

The "open door" policy was acknowledged and ratified as essential to the Agency's welfare. The Sutherland oil land protection bill having the protection of the oil strata from water infiltration as its object, was

endorsed. The acceptance of the resignation of George W. Lane as attorney for the Agency was refused by the Agency's directors.

The report of the Agency's President, immediately bearing on the Agency's business, showed the following: During 1912 the Agency received from its members 15, 337,387 barrels of oil and sold 15,043,331 barrels, the difference, 284,056 barrels, being added to stocks. The stock increase in 1911 was about 1,000,000 barrels.

President St. Clair stated that in 1912, 818 new wells were drilled as against 860 in 1911. The daily production of the Agency in 1912 was 121,000 barrels; 148,000 barrels in 1911. There is a steady decrease in the daily average surplus, while at the close of 1912 the daily average consumption was 25,000 barrels in excess of what it was in the early part of the year. The market has been steadily improving, and the Agency has gotten rid of its long-time contracts, which proved a handicap.

The Agency management predicts an increase of two cents, from 34 to 36 cents per barrel in the near future, which indicates an improved condition. The average price received during the entire year of 1912 was 32½ cents per barrel.

NOTICE

LATEST REVISED MAP OF THE Coalinga Oil Fields

(SIZE 27 X 48 INS.)

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C. C. VAN VALKENBURGH, JR.
COALINGA, CAL.

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Real Map of Coalinga Field

The Derrick is in receipt of a new map of the Coalinga oil field, which possesses some unusual merits. So much sloppy map work has been passed out to the unfortunate producer and prospector that it is a pleasure to commend a map properly and carefully drafted, all parts of which can be read with ease, and which actually distinguishes between wells of various classes.

Van Valkenburgh's map of Coalinga, which has just been issued in a new edition, revised to April 1st, 1913,

covers the territory from the south line of sections on 18-16 to the second tier in 22-14, thus including all the development work which has been done in the Coalinga field proper. The well marks distinguish between producing wells, and producing wells idle. Further, and most astonishing, a careful check of the markings demonstrates that they actually conform to the present status of the wells to which they refer—enough said.

This map shows all the property holdings over the area covered by the map, 249 sections, and these titles appear to be strictly up to date. The correct course of all roads and pipe lines is also shown, the pipe lines including the branches and feeders which are not usually shown in maps of this class.

The Derrick can commend this work to all desiring a map of this field, both for its unusual accuracy and its careful workmanship. Copies may be had from the publisher, C. C. Van Valkenburgh, Jr., Civil Engineer, Coalinga, Cal., the price of the blue print paper map being \$3.00, and of the blue line on cloth \$5.00 per copy.

From May 1, the Maricopa Queen Oil Co. will pay 1-2 cent per share monthly dividends. Result of getting gusher of high gravity oil. Central Oil, formerly a regular monthly payer, will hereafter pay quarterly. Central is located at Whittier, near the Murphy Oil Co.

The Traders' Oil Company announced recently the discontinuance of dividends. The Company will devote its earnings to drilling new wells, having room for a considerable number additional to those already producing.

Subscribe to The "Derrick" and ask your friends to do likewise: Home and possessions, \$2 per year; Canada and foreign, \$2.25.

THE STOCK MARKET

San Francisco Quotations

The market in this city is very quiet, although Associated shows considerable life. Prices for this Company's stock seem very low indeed, in view of the corporation's holdings and excellent condition as shown by its annual report, reviewed on another page. It seems probable that the reason for the low prices lies in the dividend declared; 3 per cent per annum. The stock appears an excellent buy for those who can afford to wait developments. At the present stock price the dividend is over 6 per cent annually. Better than savings bank interest with a good prospect for a large increase in stock value in time and likewise an increase in dividends.

Premier has recently sold at 25 cents per share, about one-sixth of its value when the company has a market for all its oil. Caribou has sold at 95 cents. San Francisco-McKittrick at \$14 and Associated at \$42, with some Associated bond sales, show the present interest. Following is list of latest quotations:

Company	Bid	Asked
Associated Oil Stock	\$ 41 00	\$ 41 12½
Associated Bonds 5s	101 00	101 00
Caribou	90	
Coalinga Central	20	
De Luxe	50	
Illinois Crude		05
Maricopa National	18	
Premier	28	
Republic	15	
S. F. & McKittrick		17 00
S. W. & B.	15	17
Turner	1 00	

Los Angeles Quotations

Los Angeles shows more interest in oil stock (as usual) the same being evidenced by the list of quotations following:

Company	Bid	Asked
Amalgamated Oil	\$ 82 50	\$ 84 50
American Pet. Co. (pfd.)	70 00	76 00
American Pet. Co. com	50 00	65 00
Bear Creek Oil & M. Co.	65	
Calif. Midway Oil Co.	097-8	11
Central		1 00
Columbia	82½	90
Continental Oil		15
Enos Oil Co.	01	07
Enclid Oil Co.		22½
Fullerton Oil	2 00	
Globe	01	04
Jade Oil Co.	06	
Maricopa Northern	03	
Maricopa Queen Oil Co.		55
Mascot Oil Co.		75
Midway Northern	08	087
National Pacific Oil Co.	093½	097½
Olinda Land Co. (Oil)	381½	
Palmer Oil Co.		20
Penn. Midway Oil Co.	07½	

Rice Ranch Oil Co.		1 20
Trader's Oil Co.	45 00	
Union	83 00	
Union Provident Co.	92 00	92 25
United Petroleum	90 00	
United Oil Co.	23	25½
West Coast Oil pfd.	70 00	
Western Union	60 00	95 00

(NOTE—Where there are no quotations in the above lists on any particular stock this must not be taken as evidence that same is valueless or that there is no interest taken in it generally. The market may not appeal to stockholders and so cause them to withhold their shares.)

March Dividends Greatest in History of State

As we predicted in the March issue of the Derrick the dividends paid in March were the greatest on record. Over one and two thirds millions were paid by California producing and refining companies, while the Mexican Petroleum Company, controlled by Californians, swelled the payments \$560,000, by its quarterly dividend. Standard Oil's quarterly was the same as previously, 2 1-2 per cent, amounting to \$1,123,349. The total payments aggregate \$2,251,689.52. Following is a list showing in detail the payments made by all companies:

Company	Amount
Amalgamated	\$ 50,000.00
Amer. Pet. pfd.	8,255.50
Amer. Pet. com	39,607.00
Caribou	8,070.30
Central	7,500.00
Claremont	4,500.00
Dome-Pinal	9,000.00
Home	1,000.00
Mount Diablo	7,500.00
Paraffine	8,000.00
Record	10,000.00
Rice Ranch	3,000.00
S. F. & McKittrick	5,000.00
Sauer Dough	2,992.50
Section 25	25,000.00
Standard Oil of California	1,123,349.00
State Consolidated	5,000.00
Sterling	25,000.00
Traders	9,000.00
Union Oil	184,753.60
Union Provident	91,403.02
United Petroleum	48,450.60
West Coast	10,408.00
Western Union	5,000.00
W. K.	10,000.00
Mex. Pet., Ltd., pfd.	240,000.00
Mex. Pet., Ltd., com	320,000.00
Total Dividends	\$2,251,689.52

Coalinga

By Guy H. Salisbury

(The Derrick's Special Condensed Monthly Report.)

The "Baker" Shoe

Among the many patents that have been taken out on oil well tools, by operators and oil men of the Coalinga field, the Baker Shoe is among the leaders, if not the most important invention of the time to the oil operator. The shoe was invented in 1907 by R. C. Baker, of this city. Mr. Baker is a well known operator of the west side field.

The condition in a large number of oil wells being drilled in this field made it necessary to run in the underreamer on thin hard streaks of shale, with a sort of formation between the shale, which made drilling expensive. To obviate this Mr. Baker experimented with different tools in an effort to shorten the time used in "drilling in" a well. While trying out several tools to cut down expenses on a well in this kind of formation he decided that a casing shoe should be made with chisel teeth on the bottom, which with the weight of the casing would cut through these thin shells in the formation without the use of an underreamer. After several different shoes were made, trying out the different shape and style of tooth, the present Baker shoe was patented. This shoe has reduced the drilling time on wells fully 50 per cent.

Wells in 1000 to 1500 foot territory have been drilled in, where the shoe was intelligently used, in 60 to 90 days time, as against the nine months to one year heretofore required. Today it is estimated that fully 90 per cent of casing shoes used in this state are "Baker" shoes. There are ten oil well tool factories in this state now making the "Baker" shoe. In the five years that the shoe has been on the market thousands have been sold in this state and a large number have been shipped to foreign countries, calling attention to the superiority of the California oil well tools over every other make of oil well tools known. The Baker Casing Shoe Company, a California corporation, has been organized for the purpose of handling the increasing business in "Baker" shoes. H. H. Welsh, of Fresno, is president; R. C. Baker, inventor, of Coalinga, vice-president; R. L. Peeler, of Coalinga, secretary; G. A. Scott, of Oakland, treasurer, the other members of the board are, T. A. O'Donnell, W. R. Hamilton and B. T. Dyer, all well known oil men.

Parkfield Developments

At Thompson Camp, section 13-23-14, Parkfield, Monterey County, three wells have been drilled in on the shallow part of the territory, the average depth being 110 to 225 feet. Well No. 4 is now drilling; at last reports was 150 feet deep, 8 1-2 inch casing. It is the intention of the parties interested to test out this sand to ascertain if the sand continues and is productive; if results are favorable they will go out on the formation where a well will cut the oil sand at about 800 to 1000 feet.

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Cross Sectional Map

The Water Commissioner, M. J. Kirwin, has been working on a cross section map of section 4-20-15, which will soon be completed. This will follow out the water and oil sands underground with the view of assisting the operator in handling the water sands. The Commissioner has done considerable work of this character in this field, and as its benefits are becoming known to the operator, the work is being appreciated.

Cal. Commercial Oil Co.

The California Commercial Oil Company, section 31, 19-15, (formerly the Confidence) are drilling well No. 16 in the southeast corner of the property. The hole is about 330 feet deep. The well west of No. 16 is being deepened; is now about 1385 feet deep; 6 1-2 inch casing; will go to about 1500 feet.

Bohemian Oil Company

Bohemian Oil Company, section 22, 21-15. Report has reached town that the water has been taken off the sand and the indications are very favorable; the water has backed into the formation. It will be pumped off and the well will again be put on the beam; oil reported to be 37 deg. in gravity.

Marion Oil Co.

Marion Oil Company, Section 6, 21-15. Claud Martin has taken a contract to redrill well No. 1. Work has already commenced. The rig has been strengthened and drilling started. Martin drilled in the well at the start and is confident he can "make her a producer."

Amity Oil Co.

The Amity Oil Company, section 1, 20-14, has six producing wells on the beam. One new well was put on last week. Well No. 2 is being redrilled. Will have

8 wells producing by the close of this month. The production has been increased by deepening and cleaning out the old wells.

K. T. & O.

Kern Trading & Oil Co.'s well on 7, 21-15, (No. 1) is down 3025 feet, after being cemented off at 3010 feet. The well has so far encountered three different sands, aggregating 70 feet in thickness. Company is prepared to go to 5000 feet for the "big pay." Nearby wells are: Canadian Coalinga, section 8, 21-15, producing 26 gravity oil; Associated Oil Co., same section. All these wells are south of Wartham Creek, formerly considered the end of the oil producing district. Associated is preparing to drill another on section 8. K. T. O.'s well on 35, 19-15, on the east line of the section, has landed the 15 1-2 inch, 70 pound casing at 2058 feet. It is believed that this is the longest 15 1-2 inch string in the state. It weighs more than 144,000 pounds.

Coalinga Kettleman

The Coalinga Kettleman Oil Company, section 2, 22-17, Kettleman Hills, is drilling, after a few days shut down; the well is reported to be about 4775 feet deep, heavy 4 1-4 inch casing. The Barneson interests are making an effort to thoroughly test this section of the field. They have even had an oil "smeller" visit the property. The "expert's" report made small impression on those in charge of operations.

Pluto Oil Co.

Pluto Oil Company's well No. 1, section 19, 25-19, is reported to be 3220 feet deep; 6 1-2 inch casing. A 30 foot "bridge" was put in on the last job of cementing, shutting off the water on a hard shell ledge. The cement plug is being drilled out. The company will start work at once, go into the sand and determine its value.

Azores

Azores Oil Company's well No. 1, section 26, 21-15, is again at the 3900 foot mark; or so reported. The manager backed up from 4300 feet to about 3550 feet, shot off the pipe, cleared the bottom and is drilling deeper; the bit may go to 4000 feet. The hole is reported in good shape and pipe "going."

Parkfield Wagon Road Progressing

The Coalinga-Parkfield wagon road over the mountains is completed to the summit, the county line, on the Fresno side of the mountain. T. H. Thompson, of Parkfield, reports two gangs of men at work on the Monterey side of the mountains. Work on the rocky sections is being done by the contractors; from the base of the hills, through Little Cholame Valley, the work is being done by the road master, who will put in all the culverts through to the summit.

United Development Co.

The United Development Company, section 19, 20-15, began running oil to the Independent Oil Producers Agency on April 18. The oil was started through the line by R. J. Mackenzie, the gentleman backing the company. The Hon. Wm. Gray, member of Parliament of the Dominion of Canada, Geo. Roberts and several others were present at the time. The company has about 40,000 barrels of oil in storage on the property. The wells will now be pumped to their full capacity; there are three producing wells on section 19. Well No. 1, on section 17, 20-15, is being redrilled.

Well No. 2, same section, is over 2200 feet deep with 10 inch casing. Company's condition good.

General Petroleum Installing Motors On Old Continental Lease

The General Petroleum Company, section 2, 19-15 (formerly the Continental Petroleum Company, "Wm. Graham" lease) are installing seven oil well pumping motors. These motors have a 10-horse-power rating in pumping a well, but can develop 30-horse-power in pulling a well. The steady motion of the motor saves the rods and increases the production, as the best speed for each well can be maintained. With the motors the cost of pumping a well is from 75 cents to \$1.50 per day, depending on the depth of the well and the gravity of the oil. In some favorable cases the actual expense has been cut to \$30.00 per month. These motors are the result of many experimental trials; it is claimed that they are nearly perfect in their work, easy to manage and a great saving over steam, as the pumping crew can handle three wells with a motor as against one with steam. Also, there is a saving in fuel oil and boiler repairs, a saving in time lost in cleaning a boiler, all lessening the cost of production.

Statement by the Officers of the Seaboard Oil & Transit Co.

Under date of April 8, the new Board of Directors of the above named Company sent out a statement of the affairs and condition of the Company at present time. This statement we received April 16. It was detailed and corroborated to a remarkable degree the report of the Company that appeared in the March 31 issue of this publication, showing that our sources of information were correct. The report states that on March 26, a new Board of Directors was elected, as follows: F. W. Brenneman, of Los Angeles, President; other directors: C. L. Flack, President of the Gate City Oil Co., and J. T. Nairne, B. Brown and C. T. Adams, the latter three of whom represent the shareholders, the creditors being represented by Messrs. Brenneman and Flack. It was announced that Mr. Flack, accompanied by "an expert to be selected by the Company," would go to Mexico to investigate the Company's holdings there, "within a few days." The report was very conservative, substantiating practically every statement made by the Derrick last month. Mr. Flack is now in Mexico.

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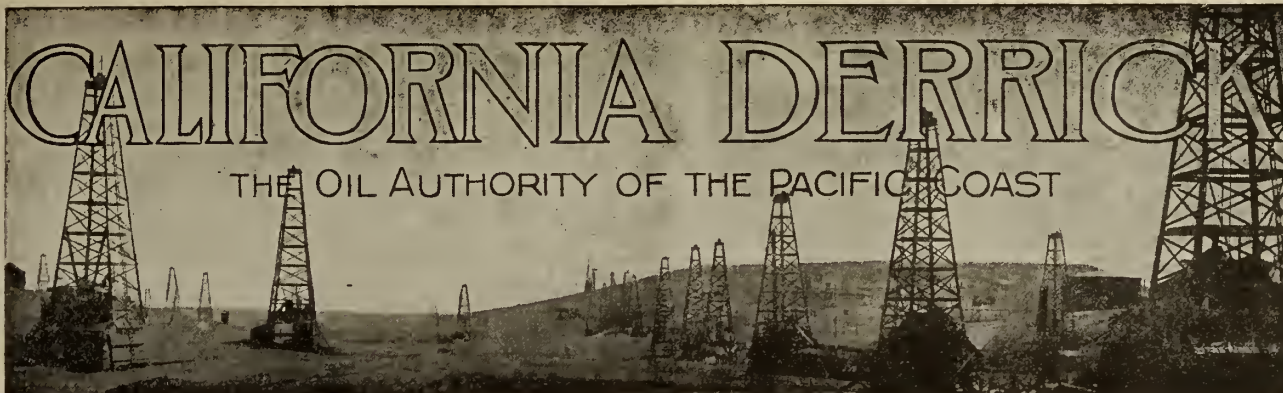
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Properties and Values of Coalinga Petroleums

Written Exclusively for the California Derrick by
PAUL W. PPUTZMAN, Petroleum Chemist and Engineer

Zone 4.

This area consists of a narrow strip along the upper edge of the main (Miocene) oil sands which furnish the bulk of the west side production, and which dip to the east and the south-east.

The western margin of this strip is fixed by the limit of productiveness as the sands approach the surface, there being no actual outcrop. The actual line is probably a little less regular than the boundary shown. At the east the line is fixed approximately at the points where the oils yielded by the wells become lighter than 14 deg. Be., points which can themselves be only approximated, as the wells penetrate several sands giving oils of slightly different gravities. There is no geological line between these two zones. At its northern end zone 4 terminates somewhat abruptly at the southeast corner of 36-19-14, heavy oils being found further north, but not in commercial quantity. At its southern end the zone has not been bounded.

The wells of this zone are all less than 1000 feet in depth, and produce from several rather thin layers of loose sand. When new, these holes make a good deal of sand, and in some parts of the field are troubled by water.

The oils of this zone are thick, black, tarry oils, exactly re-

sembling the heavier product of Kern River and Los Angeles. They give a heavy precipitate of asphaltene, and are in every respect normal asphaltic oils. The odor is mild and characteristic, not sulfurous. The analysis of a typical sample is as follows:

3403. Coalinga Western Oil Co. Well No. 1.	
Gravity	12.4 deg. Be. - - 0.9831 - - 8.17 lbs. per gal
Viscosity at 60 deg. F.	1513.0
Flash	
Sulfur	0.78 per cent
Distillation	
Gasoline	None
Engine Distillate	None
Kerosene Stock	None
Middlings	32.8 deg. 15.6 per cent.
Lubricating Stock	18.6 deg. 49.6 per cent.
Asphalt	"D" 34.8 per cent.
	or 122.1 lbs. per barrel

100.0 per cent.

This oil is suitable for road oiling, though the asphalt percentage (as determined by oven evaporation) is rather low. As a raw material for asphalt manufacture it figures as follows:

Per barrel of 42 gallons.	
Middlings	15.6 per cent
Lubricating Stock	49.6 per cent
Asphalt	34.8 per cent
Less freight and loading, 1 barrel	
Less distillation charge, 1 barrel	

6.55 gals.	2 1-4c	14.5c
20.83 gals.	2c	41.7c
122 lbs.	0.3c	36.6c
		40.0c
		12.0c
	92.8c	52.0c
		40.8c

Net value of crude

This requires no comment. A slightly better showing can be made by refining in the field, but as already stated, conditions at Coalinga are hardly such as to admit of competition with the more favorably situated fields. The lubricants from these heavy oils are of normal quality, strictly on a parity with those from Kern River and Los Angeles crudes.

Zone 5.

This area produces an oil of the same general character as that from Zone 4, but from deeper levels, and

in higher gravities. At the western edge of this zone, and at the southern end, gravities run from 14.5 deg. to 16.5 deg. Be. Toward the east and north the oils become lighter, as may be noted on the map. The wells farthest east at the southern end run as high as 17 deg. Be., which is also the limit on 7-20-15. On 31 and 32-19-15 some samples run as high as 18.5 deg., which is the limit for this zone, but regardless of gravity, the character and usefulness of these oils is highly uni-

CALIFORNIA DERRICK

form, as may be seen from the following analyses.

It is probable, though not yet demonstrated, that the deeper sands of Zone 7 underlie the northeastern portion of Zone 5. The northern limit of this zone is sharply marked, the southern end is not yet defined, though persistent water trouble at this end probably limits the useful productiveness of the sands. The line marked on the map as the eastern boundary of this zone is not definitely located, and merely indicates that the productive sands do not, in all probability, extend indefinitely to the eastward.

The oils of this group vary in viscosity in direct relation to the gravity. They are all brownish black to black oils, with a mild and characteristic odor, and behave in all ways like normal asphaltic oils.

Per barrel of 42 gallons.

Middlings	18.2 per cent
Lubricating Stock	60.3 per cent
Asphalt	21.5 per cent
Less freight and loading, 1 barrel.....	
Less distillation charge, 1 barrel	

Net value of crude, per barrel.....

4454. Wabash Oil Co. Well No. 1.

Gravity 15.8 deg. - - 0.9602 - - 7.98 lbs per bbl.
Viscosity at 60 deg. F. 310.0

Distillation	None
Gasoline	None
Engine Distillate	None
Kerosene Stock	None
Middlings	29.0 deg. 26.4 per cent 26.4 per cent

Per barrel of 42 gallons.

Middlings	26.4 per cent
Lubricating Stock	51.4 per cent
Asphalt	22.2 per cent
Less freight and loading, 1 barrel.....	
Less distillation charge, 1 barrel	

Net value of crude, per barrel.....

6489, Arica Oil Co. Wells No. 4 and 5.

Gravity 17.0 deg. Be. - - 0.9524 - - 7.91 per bbl.
Viscosity at 60 deg. F 158.0
Flash 248. deg. F.
Sulfur 0.66 per cent.

Distillation	None
Gasoline	None
Engine Distillate	None
Kerosene Stock	None
Middlings	28 deg. 38.0 per cent
Lubricating Stock	23 deg. 35.7 per cent.

Per barrel of 42 gallons.

Middlings	38.0 per cent
Lubricating Stock	35.7 per cent
Asphalt	26.3 per cent
Less freight and loading, 1 barrel.....	
Less distillation charge, 1 barrel	

Net value of crude, per barrel.....

4446. Premier Oil Co. Well No. 7

Gravity 14.6 deg. Be. - - 0.9682 - - 8.05 lbs. per. bbl.
Sulfur 0.82 deg.

Distillation	None
Gasoline	None
Engine Distillate	None
Kerosene	None
Middlings	28.0 deg. 18.2 per cent
Lubricating Stock	20.5 deg. 60.3 per cent.
Asphalt	"D" 21.5 per cent or 75.5 lbs. per barrel

This oil is low enough in sulfur for gas making, though it is less desirable than some of the lighter oils from this zone. The lubricants are of strictly normal quality. The percentage of asphalt in the raw oil is too low for road oiling. Figured as an asphalt material, this oil shows as follows.

7.64 gals.	2 1-4c	17.2c	
25.33 gals.	2c	50.7c	
75.5 lbs.	0.3c	22.6c	
			40.0c
			12.0c
		90.5c	52.0c
			38.5c

Road Oil Residue	12.0 deg. 73.6 per cent
Lubricating Stock	22.0 deg. 51.4 per cent
Asphalt	"D" 22.2 per cent or 79.9 lbs. per barrel

100.0 100.0

Figured as an asphalt material, this crude shows as follows:

11.09 gals.	2 1-4c	24.9c	
21.59 gals.	2c	43.2c	
77.9 lbs.	0.3c	23.4c	
			40.0c
			12.0c
		91.05c	52.0c
			39.5c

Asphalt	"D" 26.3 per cent. or 92.3 lbs. per barrel
	100.0

This is a freak oil as regards asphalt percentage, most of the oils of this gravity from Zone 5 running about 20 per cent. This makes the showing of distillation rather more favorable than from the two samples above. The lubricating stock is also of better than average quality.

15.96 gals.	2 1-4c	35.9c	
14.99 gals.	2c	29.9c	
92.3 lbs.	0.3c	27.7c	
			40.0c
			12.0c
		93.5c	52.0c
			41.5c

This is probably the best showing made by any oil in this zone, and it will be seen at a glance that the mar-

gin over the prevailing price of crude is much too small to justify refining.

6496. Empire Oil Co. Well No. 1.

Gravity 18.5 deg. - - 0.9428 - - 7.83 lbs. per gal.
Viscosity at 60 deg. F. 62.0
Flash 194 deg. F.

Distillation
Gasoline None
Engine Distillate None
Kerosene Stock 41.5 deg. 3.3 per cent.

Per barrel of 42 gallons.
Kerosene Stock 3.3 per cent
Middlings 18.7 per cent
Lubricating Stock 54.8 per cent
Asphalt 23.2 per cent
Less freight and loading, 1 barrel
Less distillation charge, 1 barrel

Net value of crude, per barrel.....

Zone 6.

This production comes from a small group of wells on 17 and 20-19-15, the territory being entirely drilled up and the limits determined. The oils of this group are produced from rocks of Cretaceous age.

Several grades of oil have been found in this area, though all of one general character, and but one grade (33 deg. to 34 deg. gravity) was ever commercially produced. This is a very limpid oil of a clear green color, reddish brown in thin layers. The odor is gassy, sharp and penetrating. This oil appears to consist largely of aromatic hydrocarbons, and the boiling points of all fractions are low for gravity. The analysis of the bulk of this production is as follows:

411. Home Oil Co. Lease Average.

Per barrel of 42 gallons.
Gasoline 11.4 per cent
Kerosene Stock 35.8 per cent
Fuel Residue 52.8 per cent
Less freight and loading, 1 barrel.....
Less distillation charge, 1-2 barrel.....

Net value of crude, per barrel.....

This analysis was made several years ago, and these wells are reported to now yield a lower gravity oil, containing less gasoline.

The lightest oil ever found in this field, and probably about the highest grade crude ever found in this state, was discovered in a single well in this zone, but

Distillation
Gasoline 61.3 deg. 19.1 per cent
Engine Distillate 52.2 deg. 14.6 per cent
Engine Distillate 48.4 deg. 16.5 per cent
Kerosene Stock 42.8 deg. 18.5 per cent
Middlings 32.1 deg. 19.9 per cent
Lubricating Stock 20.0 deg. 11.4 per cent
Less freight and loading, 1 barrel.....
Less distillation charge, 1 barrel

Net Value of crude per barrel.....

Zone 7.

On the southwest quarter of 28-19-15, two or three wells have been carried below the thick layer of brown shale which underlies the sands of Zones 5 and 8, and

Middlings 33.0 deg. 18.7 per cent.
Lubricating tStock 23.0 deg. 54.8 per cent.
Asphalt "D" 23.2 per cent.
or 81.4 lbs. per barrel
100.0

This is the lightest oil from Zone 5, but figures out very much like the heavier grades.

1.39 gals.	4c	5.6c	
7.85 gals.	2 1-4c	17.7c	
23.02 gals.	2c	46.0c	
81.4 lbs.	0.3c	24.4c	
			40.0c
			12.0c
			93.7c
			52.0c
			41.7c

Gravity 33.9 deg. Be., - - 0.8542 - - 8.00 lbs. per gal.
Viscosity at 60 deg. F. 1.03
Flash Below 60 deg. F.
Sulfur 0.06 per cent.

Distillation
Gasoline 60.6 deg. 11.4 per cent. 11.4 per cent.
Engine Distillate None None
Kerosene Stock 49.9 deg. 35.8 per cent 35.8 per cent.
Fuel Residue 24.5 deg. 52.8 per cent.
Middlings 30. deg. 37.5 per cent.
Lubricating Stock 20 deg. 11.2 per cent.
Asphalt "D" 4.1 per cent.
100.0 100.0

The small yield of lubricants is of good quality, but the proportion of middlings is so large and of asphalt so small that this may be classed as strictly topping oil, the residue being a first quality gas making material. When topped, this oil figures as follows:

4.79 gal.	16c	76.6c	
15.04 gal.	4c	60.2c	
52.8 bbl.	75c	39.6c	
			40.0c
			7.0c
			176.4c
			47.0c
			129.4c

never produced commercially. This was a clear red naptha, with a mild, gassy odor.

510. Zenith Oil Co. First sand oil.

Gravity 45.0 deg. Be., - - 0.8000 - - 6.65 lbs. per gal.
Viscosity at 60 deg. F. 0.98
Flash Below 60 deg. F.
Sulfur 0.06 per cent.

8.02 gal.	16c	128.3c	
6.13 gal.	8c	49.0c	
6.93 gal.	6 1-2c	45.0c	
7.77 gal.	4c	31.0c	
8.36 gal.	2 1-4c	18.8c	
4.79 gal.	2c	9.6c	
			40.0c
			10.0c
			281.7c
			50.0c
			231.7

have produced largely of an oil said to be of some 34 deg. Be. No sample of this oil was available at short notice, so that its valuation cannot be given at this time.

Zone 8.

This area covers the whole of the "East Side" lower sand territory. It is defined at its western side, the sands approaching the surface, and becoming only very slightly productive. At the north a limit appears to have been set by the failures on 2-19-15. To the east the sands continue productive, but dip rapidly, and a great depth has already been reached. At the southeast also the limit of depth has been reached, and most of the production from this end is from the higher sands of Zone 9.

The oils from this zone range from 18.5 deg. to perhaps as high as 23 deg. Be., this last figure being somewhat doubtful, as the upper sands are perforated in many of the southern wells, and thus the gravity is slightly raised.

Those are rather limpid oils, and inclined to be stringy; of a mild odor, and ranging in color from a rich olive green to jet black—the black samples, it may be noted, are not the heaviest. These oils show a slight-

ly better analysis, gravity considered, than the oils from Zone 5.

These are excellent gas-making oils, being of low viscosity, high in middlings, low in asphalt and very low in sulfur. As shown by the figures below, they have little refining value, though for complete refining the poor yield of light products is somewhat offset by the great purity of all the distillates. The lubricants, in particular, while rather light, are very clean and easily worked.

6490. Standard Oil Co. Hanford No. 7, 28-19-15.

Gravity 18.9 deg. Be., - 0.9402 - 7.81 lbs. per gal.
Flash 158 deg. F.

Distillation	
Gasoline	None
Engine Distillate	None
Kerosene Stock	42 deg. 7.6 per cent.
Middlings	33 deg. 14.0 per cent.
Lubricating Stock	20.6 deg. 61.4 per cent.
Asphalt	"D" 17.0 per cent. or 59.7 lbs. per barrel

The refining value of this oil is small, as is shown by the following figures:

Per barrel of 42 gallons.

Kerosene Stock	7.6 per cent
Middlings	14.0 per cent
Lubricating Stock	61.4 per cent
Asphalt	17.0 per cent
Less freight and loading, 1 barrel.....	
Less distillation charge, 1 barrel	

3.19 gal.	4c	12.8c
5.88 gal.	2 1-4c	13.2c
25.77 gal.	2c	51.6c
59.7 lbs.	0.3c	17.9c
		40.0c
		12.0c
		95.5c
		52.0c
		43.5c

Net value of crude, per barrel.....

1466. Caribou Oil Co. Lower sand oil.

Gravity 19.8 deg. Be., - 0.9346 - 7.77 lbs. per gal.
Viscosity at 60 deg. F. 29.2
Flash 143 deg. F.
Sulfur 0.79 deg.

Distillation	
Gasoline	None.....None.....
Engine Distillate	42 deg. 2.0 per cent 2.0 per cent.
Kerosene Stock	42 deg. 20.0 per cent. 20.0 per cent.

Engine Distillate	2.0 per cent
Kerosene Stock	20.0 per cent
Fuel Residue	78.0 per cent
Less freight and loading, 1 barrel.....	
Less distillation charge, 1-4 barrel.....	

Fuel Residue	14.5 deg. 78.0 per cent.
Middlings	30 deg. 24.0 per cent.
Lubricating Stock	22.5 deg. 37.0 per cent.
Asphalt	"D" 17.0 per cent. or 59.7 lbs. per barrel

100.0 100.0

Figured as a topping oil, this crude gives the following results:

Net value of crude, per barrel.....

The showing on the same oil for complete distillation is:

Engine Distillate	2.0 per cent
Kerosene Stock	20.0 per cent
Middlings	24.0 per cent
Lubricating Stock	37.0 per cent
Asphalt	17.0 per cent
Less freight and loading, 1 barrel.....	
Less distillation charge, 1 barrel	

0.84 gal.	8c	6.7c
8.40 gal.	4c	33.6c
10.08 gal.	2 1-4c	22.7c
15.54 gal.	2c	31.1c
59.7 lbs.	0.3c	17.9c
		40.0c
		12.0c
		112.0c
		52.0c
		60.0c

Net value of crude, per barrel.....

6491. California Oil Fields, Ltd. 14-19-15.

Gravity 20.2 deg. - 0.9320 - 7.74 lbs. per gal.
Sulfur 0.75 per cent.

"Zerolene" is Vouched for by the Standard Oil Company.

Distillation							
Gasoline	61 deg	None.					
Engine Distillate		None					
Kerosene Stock	42. deg.	5.3 per cent	2.23 gal.	4c	8.9c		
Middlings	34. deg.	14.0 per cent	5.88 gal.	2 1-4c	13.2c		
Lubricating Stock	21.6 deg.	67.9 per cent	28.52 gal.	2c	57.0c		
Asphalt	"D"	12.8 per cent	44.9 lbs.	0.3c	13.5c		
Less Freight and loading, 1 barrel							40.0c
Less distillation charge, 1 barrel							12.0c
Net value of crude, per barrel.....						92.6c	52.0c
							40.6c

This is about the poorest showing made by any oil in this zone.

3404. California Oil Fields, Ltd. 27-19-15.

Gravity 21.9 deg. Be., - - 0.9217 - - 7.66 lbs. per gal.
Viscosity at 60 deg. F. 13.5
Flash 149 deg. F.
Sulfur 0.82 per cent.

Distillation							
Gasoline		None					
Engine Distillate	52 deg	2.0 per cent	0.84 gal.	8c	6.7c		
Kerosene Stock	42 deg.	9.0 per cent	3.78 gal.	4c	15.1c		
Middlings	33 deg.	27.0 per cent	11.34 gal.	2 1-4c	25.5c		
Lubricating Stock		43.8 per cent	20.50 gal.	2c	41.0c		
Asphalt	"D"	18.2 per cent	63.9 lbs.	0.3c	19.2c		
Less Freight and loading, 1 barrel							40.0c
Less distillation charge, 1 barrel							12.0c
Net value of crude, per barrel.....						107.5c	52.0c
							55.5c

7451. California Oil Fields, Ltd., 21-19-15.
Gravity 23.1 deg. Be., - - 0.9144 - - 7.60 lbs. per gal.

Viscosity at 60 deg. F. 6.2
Sulfur 0.45 per cent.

Distillation							
Gasoline		None					
Engine Distillate	52 deg.	5.7 per cent	2.39 gal.	8c	19.1c		
Kerosene Stock	42 deg.	8.0 per cent	3.36 gal.	4c	13.4c		
Middlings	30 deg.	26.1 per cent	10.96 gal.	2 1-4c	24.7c		
Lubricating Stock	25 deg.	48.6 per cent	20.41 gal.	2c	40.8c		
Asphalt	"D"	11.6 per cent	40.7 lbs.	0.3c	12.2c		
Less Freight and loading, 1 barrel							40.0c
Less distillation charge, 1 barrel							12.0c
Net value of crude, per barrel.....						110.2c	52.0c
							58.2c

Zone 9.

Above the sands of Zone 8 lies an upper sand which produces a lighter and much more valuable oil. This upper sand is only slightly productive at its northern termination (at the southwest corner of 28-19-15) but becomes more productive down the dip (to the east) and highly productive farther south on the antiline, which plunges to the southeast. The bounds for this zone shown on the map are only roughly approximate.

The oils from this zone are more limpid than those

from Zone 8, and very stringy in consistency. They are blacker in color, of a very mild odor, and as will be seen from the first analysis, yield a much larger percentage of light products than oils of the same gravity from Zone 8. They are all refining oils of the first class. The lubricants are thin and of little value.

490. Caribou Oil Co. S. W. 1/4 28-19-15.

Gravity 22.0 deg. Be., - - 0.9211 - - 7.65 lbs. per gal.
Viscosity at 60 deg. F. 3.8
Flash 65 deg. F.

Distillation							
Gasoline	60 deg.	6.1 per cent	2.56 gal.	16c	41.0c		
Engine Distillate	52 deg	6.4 per cent	2.69 gal.	8c	21.5c		
Kerosene Stock	42 deg.	9.0 per cent	3.78 gal.	4c	15.1c		
Middlings	29 deg.	14.0 per cent	5.88 gal.	2 1-4c	13.2c		
Lubricating Stock		46.5 per cent	19.53 gal.	2c	39.1c		
Asphalt	"D"	18.0 per cent	63.2 lbs.	0.3c	10.0c		
Less Freight and loading, 1 barrel							40.0c
Less distillation charge, 1 barrel							12.0c
Net value of crude, per barrel.....						148.9c	52.0c
							96.9c

Compare this analysis with No. 3404, which has the same gravity.

(Continued on Page 14)

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

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The ***
*Derrick's
* * Creed

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

Both consumption and production are lower than last month, but the market is over 8,000,000 barrels while the output is under that amount. The April report tells you all about it.

* * * * *

Union Oil Stock has declined on the exchanges in a most marked manner since the issuance of the last annual report. Report showed more business done than ever before but asked for \$3,000,000 bond money. As dividends will continue regularly, the decline is considered attributable to general conditions.

* * * * *

Bulletin 63 of the State Mining Bureau is giving immense satisfaction to Coast and Southern operators. They say it is worth \$50 per book to every operator in the fields disscussed. Quite a boost for the man who wrote it—Paul W. Prutzman.

* * * * *

Some people are wondering how General Petroleum is going to finance the purchase of the control of the Union coterie of companies. De Sabla, Barneson and Co. will doubtless be pleased to enlighten them at the proper time.

* * * * *

Engineer Alfred Abbey's new "Midway, Sunset, McKittrick, Belridge and Lost Hills Directory" is now available and same is highly recommended by any number of operators.

* * * * *

"Waste In the Production and Utilization of Natural Gas, and Means for Their Prevention" is the title of Technical Paper 38 of the U. S. Bureau of Mines, by Arnold and Clapp. The paper is easy and valuable reading and can be read with profit by thousands of operators.

* * * * *

Owing to the length of Mr. Paul W. Prutzman's article, "Properties and Values of Coalinga Petroleum," the Derrick presents less news matter this issue than usually, but this will be fully made up for in our next issue.

Necessity of Fuel Oil to California

A heavy-oil producer recently said to a group of oil men gathered at the Palace Hotel in San Francisco:

"California could do without light oil production at all; but think of the utter paralysis of business this State would suffer if the heavy oil production should suddenly decline."

The other oil men became interested at once. They wanted reasons, supplemented by facts. They got them and straight from the shoulder. To the practical oil men who listened, they afforded room for serious thought. These reasons follow:

"It is only because we have cheap fuel that we are on a manufacturing basis here, at all. As you know, coal costs \$6 per ton wholesale, in San Francisco, and it isn't the best coal at that. Three barrels of ordinary fuel oil, capable of producing the same amount of heat as one ton of coal, costs at present rates \$2.25. In other words, to operate with coal as fuel, the cost of manufacturing and heating buildings, making gas, etc., is immediately more than doubled. We all know that the coal supply is limited, even at the prevailing prices. Such being the case, you can see for yourselves what would happen if the FUEL OIL supply were suddenly seriously diminished.

"This is merely from the initial cost view point alone, and does not take into consideration the many other savings made by the use of oil as fuel. I venture to say that temporarily, at least, the State would nearly go bankrupt if our oil supply shut down on us, when you consider that practically every factory, of whatever nature, runs on fuel oil. Last year California produced nearly 25 per cent of the entire world's oil output. Two thirds of our production was strictly fuel oil, the other third being valuable for refining. While the refining is eagerly sought after by the marketers, they could get their whole supply from Sumatra and the Dutch East Indies, if necessary; but WHERE could this State procure an adequate fuel supply, if our present supply were to give out? I do not anticipate the supply will 'give out' but the increased demand is going to push production to the limit.

"It is easy enough to state that when the Panama Canal is opened coal can be shipped from Pennsylvania direct to San Francisco and Los Angeles in competition with California oil; but as a matter of fact oil is being shipped to New York and other ports from Mexico. And the demand is almost unlimited at a better price than is paid for California oil. To return to Pacific Coast conditions: Think of buying the best, most efficient and economical fuel known for a price equivalent to \$2.25 per ton! We cannot replace our oil supply when it is gone and today a large part of this oil is bringing LESS THAN THE COST OF PRODUCTION, and is being sold so rapidly that CONSUMPTION IS AHEAD OF PRODUCTION. This is a terrible economic waste and the country is bound to pay for it later on; the price of fuel oil at the well right now should be 75 cents per barrel; and not a cent less. Fuel oil should not be sold for less than cost of production when it is so valuable, so absolutely essential to the welfare of this Coast. Where are we going to get MORE when the present supply begins to dwindle? Present consumption is at the rate of 100,000,000 barrels annually—and stocks are bound to be drawn on more and more as time passes. For this reason I predict a rapid rise in the price of this product."

There certainly is sense to this viewpoint.

"Lsey" Trucks Will Stand the Test.

Now that Midway oil is on tap in Los Angeles the Standard cuts its price on all Fullerton oils five cents per barrel: Expected, but far from welcome!

* * * * *

Uncle Sam has lots of oil, says our new Secretary of the Interior: No doubt about it, but can Uncle deliver the goods to his War Department? That's the question!

* * * * *

Henry M. Flagler, the great constructive genius of Standard Oil, has just passed away after a life of eighty-three successful years.

* * * * *

The Hewitt Bill and its companion measures, the Carr and Campbell bills, supplementary to and forcing compliance with the terms of the Hewitt Bill, have all passed both houses of the Legislature and now only await the signature of the Governor to become law. When signed, the bills will force the obligations of common carriers on all companies owning and operating pipe lines in this State, and subject to the State Railroad Commission. There is no possible way to wriggle around the bills, excepting through the courts. Now for the battle!

* * * * *

Allan C. Wright Passes Away

It is but a few days ago that we learned of the death about a month past of Mr. Allan C. Wright, identified with the oil business through his connection with the Petroleum Rectifying Company. Mr. Wright was still a young man, keenly intelligent, kindly, and very well liked. His death is a sore blow to many friends.

Exports of Oil From San Francisco In April, 1913

The total exports of all classes of mineral oils from the Port of San Francisco were larger by nearly 3,500,000 gallons than for the month previous. The relative values of the combined exports during March and April were respectively \$577,371 and \$650,245, April showing a gain of \$72,784. The following table shows the shipments in detail, without comparisons, which can be obtained by referring to the April number of the Derrick:

	Gallons	Dollars
Crude	4,890	\$ 420
Illuminating	6,418,135	314,234
Lubricating and Paraffin	193,885	25,746
Naptha, Gasoline Etc.	76512	13,413
Residuum, Gas Oil, Fuel Oil, Etc.	17,986,016	296,432
Totals	24,579,438	\$650,245

COALINGA ITEMS Bohemian Oil Company

The Bohemian Oil Company, section 22, 21-15, landed and cemented their 4 1-2 inch casing; have set in the extra heavy 3-inch casing, having extra heavy collars; the Nevins straight hole shoe on the casing is cut out of solid steel, the pipe is free and going nicely. This hole will fully explore this section of the country on the Jacalitos Creek.

Marion Oil Co.

The Marion Oil Company, section 6, 21-15: The re-drilling of well No. 1 is progressing nicely, contractor Martin found a ball bottom bailer in the hole, making it difficult to drill. Two balls were caught in a suction pump and brought to the surface. The bit is now near the old bottom of the well.

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California Production for and Field Operations During April, 1913

Consumption of Over 8,000,000 Barrels and Daily average Shortage of Over 5,000 Barrels, are Main Features of Report

The main features of the April field report are: Consumption exceeds production by 160,920 barrels of oil. The total consumption for the thirty days in April was 8,104,770 barrels, or 473,460 barrels less than for March. The daily average consumption was smaller in April by 5,558 barrels than for March, but at that it exceeded the daily average production by 5,364 barrels. The average daily consumption in April was 270,159 barrels, against 276,717 barrels in March.

The total production for April was 7,943,851 barrels as against 8,184,809 barrels for the previous month, but the daily average production shows a gain of 769 barrels. Daily production figures: March, 264,026 barrels; April, 264,795 barrels.

The daily average shortage for the two months shows quite a discrepancy, the figures being, 12,691 barrels shortage daily during March and 5,364 barrels daily during April. Drawing on stocks the past two months has brought total storage back to the 46,000,000 barrel "mark" again.

Standing of the Fields

In the daily averages, which are the true gauges, the following fields registered gains: Lost Hills, 1708 bar-

rels daily; Coalinga, 654 barrels; Salt Lake, 263; Santa Maria, 200; Fullerton, 194; Midway, 168; Lompoc, 105; McKittrick, 100; Santa Paula, 69; Newhall, 27; Summerland, 1. Puente produced 80 and Watsonville 75 barrels daily, the same as in March. Kern River shows a daily loss of 1950 barrels; Whittier a loss of 158 barrels and Los Angeles dropped off 1 barrel per day. The most remarkable feature of this part of the report is the gain in the Lost Hills output. Some wonderful wells are being brought in, all producing high gravity oil. The Standard has been particularly fortunate in this respect, getting gushers within the last few days, the gravity of the oil produced being in each case above 35 degrees, according to reliable information. The oil is light green and 25 per cent gasoline. Lost Hills is becoming more and more important.

Rigs, Wells Drilling, Etc.

There were 83 rigs completed in April, against 78 in March. Wells drilling increased from 362 in March to 397 in April. Wells producing increased from 5784 in March to 5847 in April, due to resumption of activity as well as new producers. Against 54 wells completed in March, there were but 44 in April. There were 8 abandonments in April—twice as many as during the previous month. Following is our regular monthly table, giving all the details:

FIELD	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Daily Av. Prod. (To within 1-2 Bbl)	Prod. for Month
Kern River	3	5	1,651	3		31,630	890,400
McKittrick	12	17	298	4		18,610	561,299
Midway	21	122	770	17	2	81,314	2,444,467
Sunset	9	37	266	3		17,125	495,450
Coalinga	8	70	886	2	5	52,324	1,589,334
Watsonville			5			75	2,250
Lompoc	2	2	27	1		2,710	84,450
Santa Maria	1	17	176			14,790	449,700
Summerland			122			170	5,130
Santa Paula	10	24	316	5	1	2,512	77,434
Newhall		1	78			275	9,057
Salt Lake		10	288	2		7,401	229,908
Los Angeles			400			1,052	31,530
Whittier-Coyote	3	17	147			4,810	139,773
Puente		1	56			80	2,400
Fullerton-Brea Canon	3	58	295	1		22,625	684,578
Lost Hills	11	14	66	6		16,522	246,891
Salinas Valley		2					
Repetto							
	83	397	5,847	44	8		7,943,851

Summary

	Barrels.
Stocks March 31, 1913.....	46,996,189
Prod., April, 1913	7,943,851
	54,940,040
Consump., April 1913	8,104,770
	46,835,270
Stocks, April 30, 1913.....	46,835,270
Daily Ave. Production.....	264,795
Daily Ave. Consumption.....	270,159
Daily Ave. Shortage	5,364

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Why the Common Carrier Law Was Passed

(By Col. Timothy Spellacy)

The Hewitt Bill, making all pipe lines in California common carriers, has been passed by both houses of the legislature and now only awaits the signature of the governor to become law.

The Hewitt bill was passed by the Legislature of this State at the earnest solicitation of independent operators, after a protracted fight had been carried on in Sacramento against the measure, and after the most careful investigation by those who finally almost unanimously passed it. They passed the bill because they knew they had in it an effective check to monopoly in California oil.

It is my opinion that the new law will prove itself most beneficial, a wise and just measure for the good of producers and consumers alike, and not merely of benefit to those who urged the law upon the Legislature. I am glad of the opportunity to inform your readers that this measure was not merely the work of a small coterie of producers headed by myself, as was presumed by most of its opponents, but that it was actively supported by a large number of them, contrary as that may seem to those who read the newspapers which uniformly termed each law passed a "freak." Among those who supported the measure actively were S. A. Guiberson of Coalinga, J. W. Jamison and others. We also had a petition signed by a large number of independent producers. Does this sound as though we had passed a measure having but little support?

Constitutionality

The "unconstitutionality" of the Hewitt law was quite generally assigned by those hostile to its enactment as the reason for their hostility. I particularly noticed in your April Number the statement of John M. Wright and Henry Aeh. Not caring to discuss this in a personal way, I will only say the opinion that the bill is "unconstitutional and will not stand" seemed to rest wholly on the recent decision of the Commerce Court, which declared unconstitutional the Act of Congress making inter-state pipe lines common carriers. Right here I desire to say that as far as I know the Commerce Court has not been RIGHT on any single GREAT question coming before it to date; and the fact that Justice Maek dissented from the opinion rendered by the other judges of the Commerce Court is sufficient indication to our attorneys that the Commerce Court's decision will be reversed by the Supreme Court of the United States. Those who have not read Justice Maek's dissenting opinion would do well to look it over; and those interested in the Hewitt law may rest assured that we who put it through the Legislature of this State, had full faith in its constitutionality and good legal advice before we undertook to support this particular measure.

Opposing Legislator Had Not Read Measure

Many of those who attacked the bill did so merely from "Standpatism"; some of them not even having read the measure they were declaiming against. One of the law makers in Sacramento stated on the floor of the Senate Chamber that the measure was "unconsti-

tutional" and when asked "Why" merely said: "Because it is, that's all." He afterwards acknowledged, while still in the Senate Chamber, that he had not read the measure but had gained his impression by "hearsay." It might not be amiss to add that he was one of the "old regime."

Objections Swept Away

The objections of President St. Clair of the Producers Transportation Company before the Judiciary Committee of the State Senate to the effect that it was impractical to try to pass a measure that forced the pipe line companies to take oil of all gravities, because the oils would mix was refuted by the testimony of S. A. Guiberson, who stated before the same body that he had already transported oils of different gravities through the pipe line in the Coalinga field over which he had supervision; that at first he placed a "plug" between the different gravity oils so that they would not mix, but later found this unnecessary, as when heavy oil was first pumped through the line and light oil followed it, only the first few barrels coming from the pipe were found to be mixed. Here was actual experience against "belief"—and needless to say actual experience won the day.

Another objection was that independents who might be expected to use the pipe line had no terminal storage. This seems to me a silly objection: Who is going to ship his oil, when he has no terminal storage, if he has not already sold it? Let the buyer worry about that. Do the majority of railroad shippers have terminal storage? They do not. They ship direct to consumer and so will those who ship their oil by pipe line, because the pipe lines deliver at tidewater direct from wharf-pipe to vessel. If you have in view other than ship consumption, it will not be difficult to arrange for the delivery of your oil direct from pipe line to consumer. Capital will not be lacking when shown a market to profit by investing in a delivery system.

It is perhaps needless to bring up the many senseless objections made to the Hewitt law by those objecting to it, only to refute them, but one idea I feel it incumbent upon me to dispose of is the erroneous one that this measure is confiscatory; it is not so at all. It is merely a measure to REGULATE rates and practices so that monopoly shall not become enthroned. It is true that "the Constitution of the State of California and the United States guarantees a man his property" as John M. Wright was quoted saying, in the April Derrick, but, both the State of California and the United States of America retain the right in their constitutions to REGULATE and control property, and those who have read the Hewitt law will find that this measure undertakes no more than is constitutionally permissible.

I reiterate that a great victory has been gained for the people of this State in the face of fierce opposition; and we heartily compliment the Legislature that passed the bill now awaiting the governor's signature. It gives the really independent producers an opportunity to avail themselves of the market that is rightfully theirs.

Coalinga

(By GUY H. SALISBURY)

(The Derrick's Special Condensed Monthly Report.)

Deep Wells Profitable

Well No. 4 of the Coalinga Mohawk Oil Company, section 12, 20-15, 4,085 feet deep, is making 400 barrels per day; the company claims it to be a good paying well. This well has always been a pumping well. Well No. 1, on the same territory, is now a pumping well at a depth of about 4000 feet. The Kern Trading and Oil Company, on sections 1 and 11, 20-15, adjoining the Mohawk, are rigging up on two wells. The Company is well aware of the depth of this territory, 4000 feet, and by this development work acknowledge that a well can be pumped to advantage and profit at that depth. The Standard Oil Company, on section 36, 19-15, are rigging up on Sontag well No. 5, located near the center of the section, at least half a mile further east on the formation than any of the above wells, territory being 4500 feet deep. The Standard is equipped with full knowledge of the field, and the possibilities in an oil well, as is no other company in the State. This is not a gusher field. True, some wells flow for a time; then they go on the pump. The work contemplated by the Standard as here stated confirms the statement that wells in light oil can be pumped at a depth of 4000 feet at a profit. There are several other wells in this field today pumping at over 3500 feet. Work is not as hard on the sucker rods, or the working barrels in a pumping well, in light oil as in a heavy oil. The fact is well established that oil can be pumped from 3500 to 4000 feet and deeper at a profit, if properly handled.

Standard's Operations On 28

The Standard Oil Company, section 28, 19-15, is gradually reaching out for the oil sands on the west side of the section. Two rigs are now building on the west line. The wells drilled through the brown shale, on the north line of this section, encountered a paraffine base oil in the Tejon (eocene) sands. The first 400 feet above the brown shale consists of alternating gas, oil, dry and tar sands, interbedded with shales and clay. This condition had deterred other companies on the east side from drilling through the brown shale. The oil from this sand is reported as good refining oil. The company owns the entire section, and operates it all with the exception of a ten acre lease in the center of the section held by George D. Roberts. The Standard has over 67 producing wells on this section. On section 36, 19-15, the Company has three wells in oil, one well drilling and one rig building in the southeast corner of the northwest quarter, furthest east on the formation of any company in this field. The desire for light oil has brought the deep territory into notice; this territory is over 4000 feet to oil.

The Standard have completed Sontag rig No. 5 and are rigging up. The cottages are also completed. This well will be the farthest east on the formation of any

well in the field, and will be watched with much interest as it will extend the field to the east.

Coalinga National Petroleum Oil Co.

Coalinga National Petroleum Oil Company, section 8, 20-15, is controlled by the Barneson interests. Well No. 1 was drilled during 1909, to about 2745 feet. The initial production was very encouraging. Later on water came in through a faulty joint of casing, so reported. Several attempts were made to shut this water out of the sand but were not wholly successful. As a last resort a plant was set up on the property to separate the oil from the water and this was successful in a measure. Later the casing collapsed and the effort to remove the bad casing having failed the property was shut down, that the company could hold a stockholders meeting, to decide a policy to pursue. It is more than likely a new well will be drilled, the old well plugged. The logs of well No. 1, and the logs of wells on all side of old Well No. 1, will be a great assistance on the new well.

K. T. O. East Side Work

The Kern Trading and Oil Company are doing considerable development work on the east side. On sections 3, 19-15, to the extreme north of the east side field the company is running six strings of tools and getting satisfactory results; on section 11, 19-15, one well on the south line, east of the center line, is reported doing 800 barrels per day, of good clean oil; there are over 20 completed wells on this section. On section 35, 19-15, the company has completed wells and are drilling on all sides of the section, offsetting wells of the "Limited" on the north and west lines, the W. K. on the south and the Standard on the east. The oil from this section is light; 24 gravity and better. Well No. 40,

(Continued on Page 14)

NOTICE

LATEST REVISED MAP OF THE Coalinga Oil Fields

(SIZE 27 X 48 INS.)

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THE STOCK MARKET

The main feature of the market is the decline in Union Oil. What has brought this about is a question. Other stocks without near the proportionate assets of the Union, do not seem to be affected. In fact, trading is comparatively brisk to what it was a while back, both here and in the south. Following are the latest San Francisco quotations:

SAN FRANCISCO QUOTATIONS

COMPANY	BID	ASKED
Amalgamated Oil.....	\$ 84 00	\$.....
Associated Oil Stock	41 25	.....
Bay City .....	.....	55
Caribou	85	.90
Coalinga Central	20	.....
Coalinga National	10	.....
Illinois Crude .....	.....	05
Monte Cristo	75	80
National Pacific	02	.....
Pacific Crude Oil .....	.....	30
Premier	25	.....
Pyramid	08	09
Record	2 50	.....
Republic .....	.....	15
Shawmut .....	.....	75
S. W. & B.	15	18
Sunset Monarch .....	.....	1 10
Turner	1 15	1 25
Wolverine	50	.....
W. K. Oil Co.	1 75	.....

LOS ANGELES QUOTATIONS.

COMPANY	BID	ASKED
Amalgamated Oil	83 00	84 00
American Pet. Co. pfd.....	70 00	76 00
American Pet. Co., com.....	50 00	65 00
Associated Oil	41 12½	41 62½
Bear Creek Oil & M. Co.....	68	76
Calif. Midway Oil Co.	13	.....
Central	50	1 00
Columbia	84	85½
Continental Oil .....	.....	15
Enos Oil Co.	01	.....
Euclid Oil Co. ....	.....	20
Fullerton Oil Co.	2 00	.....
Globe	01	03
Jade Oil Co.	06½	06¾
Maricopa Northern	03½	.....
Mascot Oil Co.	25	.....
Mexican Pet., Ltd., pfd.....	90 00	95 50
Mexican Pet., Ltd., com.....	62 00	65 00
Midway Northern	06	.....
National Pacific Oil Co.	04	04¼
New Pennsylv. Pet. Co. ....	.....	55
Olinda Land Co. (Oil)	39	.....
Palmer Oil Co.	07½	.....
Trader's Oil Co.	47 00	.....
Union	85 12½	85 00
Union Provident Co.	90 12½	.....
United Petroleum	89 00	91 00
United Oil Co.	19¼	19⅞
West Coast Oil, pfd	71 00	.....
Western Union	70 00	100 00

Big Dividend Payments in April

Considering that April was the first month of the second quarter, the dividend payments are nothing short of remarkable. Excluding the Standard's huge quarterly payment, they are larger than for March. Associated swelled the total with its \$600,000. Producer's Transportation's \$105,000, was another big disbursement, while Fullerton paid 5 cents per share additional, or \$60,000 in all. Union Oil made its usual payment of \$184,000. The following list shows the companies making disbursements in April, as far as known:

Amalgamated	\$ 50,000.00
Associated	600,000.00
Amer. Pet. pfd	8,255.50
Amer. Pet. com	39,607.00
Central	20,000.00
Claremont	4,500.00
Columbia	51,283.36
Fullerton	60,000.00
Home (Coalinga)	1,000.00
Mt. Diablo	7,500.00
Olinda Land	15,000.00
Paraffine	3,000.00
Pacific Crude	6,969.04
Pinal-Dome	4,000.00
Producers Transportation ...	105,000.00
Record	10,000.00
Rice Ranch	3,000.00
S. F. & McK.	5,000.00
S. F. & McK. (extra)	5,000.00
Saucar Dough	2,992.50
Section 25	20,000.00
State Consolidated	5,000.00
Union Oil	184,753.60
Union Prov.	91,403.02
United Petrol.	48,450.60
West Coast	10,408.00
Western Union	5,000.00
W. K.	10,000.00

Total disbursements\$1,382,122.62

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Properties and Values Coalinga Petroleum, Continued

1431. California Oil Fields, Ltd. 27-19-15.			Gravity	26.0 deg. Be. - - 0.8974 - - 7.46 lbs. per gal.		
Distillation						
Gasoline	61 deg.	9.2 per cent	3.86 gal.	16c	61.8c	
Engine Distillate	48 deg.	3.2 per cent	1.34 gal.	6 1-2c	8.7c	
Kerosene Stock	42 deg.	15.3 per cent	6.43 gal.	4c	25.7c	
Middlings	31 deg.	16.3 per cent	6.85 gal.	2 1-4c	15.2c	
Lubricating Stock	26 deg.	39.0 per cent	16.38 gal.	2c	32.8c	
Asphalt	"D"	17.0 per cent	59.7 lbs.	0.3c	17.9c	
Less Freight and loading, 1 barrel						40.0c
Less distillation charge, 1 barrel.....						12.0c
					162.1c	52.0c
Net value of crude per barrel.....						110.1c

2430. California Oil Fields, Ltd. 27-19-15.			Viscosity at 60 deg. F. 3.1		
Gravity	28.7 deg. Be. - - 0.8822 - - 7.33 lbs. per gal.		Flash	at 60 deg. F.	
Distillation					
Gasoline	65 deg.	15.2 per cent	6.38 gal.	16c	102.1c
Engine Distillate	-----	None	-----	-----	-----
Kerosene Stock	42 deg.	17.0 per cent	7.14 gal.	4c	28.6c
Middlings	28 deg.	25.3 per cent	10.63 gal.	2 1-4c	23.9c
Fuel Residue	14.0 deg.	42.5 per cent	0.425 bbl	75c	31.9c
Less Freight and loading, 1 barrel					40.0c
Less distillation charge, 0.6 barrel					8.0c
					186.4c
Net value of crude per barrel...					48.0c
					138.5c

7432. California Oil Fields, Ltd. 27-19-15.			Viscosity at 60 deg 2.0		
Gravity	31.3 deg. Be. - - 0.8679 - - 7.21 lbs. per gal.		Flash	Below 60 deg. F.	
			Sulfur	0.38 per cent.	
Distillation					
Gasoline	61 deg.	24.2 per cent	10.16 gal.	16c	162.6c
Engine Distillate		None			
Kerosene Stock	42 deg.	15.0 per cent	6.30 gal.	4c	25.2c
Middlings	30 deg.	44.1 per cent	18.56 gal.	2 1-4c	41.8c
Lubricating Stock	25 deg.	7.6 per cent	3.19 gal.	2c	6.4c
Asphalt	"D"	9.1 per cent	31.9 lbs.	0.3c	9.6c
Less freight and loading, 1 barrel					40.0c
Less distillation charge, 1 barrel					12.0c
					245.6c
Net value of crude per barrel...					52.0c
					193.6c

(EDITOR'S NOTE—The December, 1912, issue of the Derrick contained a map of the Coalinga field, in which are outlined the "Zones of Production" here mentioned. This number also gives the basis on which the calculations of values are made. Reference should be made to this data in connection with the second installment, above presented, as otherwise the figures as to value might be misleading. It must also be understood that these values are based solely on the REFINING qualities of the oil and not on a FUEL basis, which would, of course, make a decided difference in value at the well.)

Coalinga, Continued

recently brought in, is making 950 barrels per day and flowing.

On 35, 19-15, well No. 21, in the southeast corner of the section, is over 2760 feet deep, 10-inch casing. The well was started last February. It will be finished up with 8 1-4 inch casing. In carrying the string of 15 1-2-inch, a circulator was used in conjunction with the Keck Swinging Spider; the circulator and swinging spider is not generally known, as this is a late patent of Wm. Keck. The spider hangs suspended from the top of the derrick; 40 foot reins hold the spider. There are nine lines in the derrick from the calf wheel, so that when necessary the pipe can be picked up while drilling; there is no lost time, as the tools are running while the pipe is moved; thus the pipe is free at all times, which is fully appreciated by the driller on the hole.

On section 7, 21-15, well No. 1 is 3325 feet deep with 6 1-2-inch casing, pipe free and going. A hard shell has been passed through, much the same formation as that encountered in the Azores well, section 26, 21-15.

Medallion Oil to Abandon Kettleman Property

The Medallion Oil Company, section 20, 22-15, Kings County, operating in the Kettleman Hills, is preparing to abandon the property after drilling a hole over 4000 feet deep. The material has been purchased by the Union Tool Company and the contract for hauling the material into Coalinga has been given to Cheney Brothers of Coalinga; the haul is about 28 miles. The pipe was pulled and found in good shape, all tools and material will be hauled in. The development work was carried on with great care by men with ample means, and this case of abandonment will about determine that section of the Kettleman Hills.



THE INSIDE STORY OF THE GOVERNMENT PETROLEUM RESERVES

Reasons for Selection of Elk Hills as Naval Reserve No.

1 Come Out in S. P. Trial.

When the Elk Hills region was selected by the Government and certain sections practically covering the district were withdrawn from public entry as Naval Petroleum Reserve No. 1, there was a great deal of comment, some of it very unfavorable indeed. The reasons for the selection of this territory and of Reserve No. 2 have recently become public property through the introduction of the letters of Robert Anderson, the geologist who recommended to the Geological Survey that the land be withdrawn, as secondary evidence in the suit of the Government against the Southern Pacific Railway, which suit is being carried on by the Government for the purpose of recovering certain sections in the Elk Hills as having been fraudulently gained by the S. P. under an agricultural patent when, the Government alleges, the S. P. knew that the land was oil bearing.

The full correspondence on the subject was introduced as evidence at the request of the railroad's attorneys, who afterwards desired it stricken from the records as it was not favorable to them. They were unsuccessful, the motion they proposed to this effect being denied. As the full correspondence would take up the major portion of our magazine, we will give a brief digest of the letters written by Mr. Anderson, covering the selection of the Elk Hills property. Mr. Anderson begins his letter to the Director of the Geological Survey by stating that he gives a list of the sections recommended for the proposed Navy Reserve; that they all lie within the Elk Hills, comprising the major portion of the district and that they are all included in the outstanding withdrawals of September 27, 1909. That the selected district is mostly undeveloped; that it is chosen because it affords the "only large and compact body of public lands in California in which the presence of oil in large quantity is sufficiently certain to warrant dependence being placed upon it as a reserve; that the Elk Hills were classified by the Geological Survey geologists as oil-bearing

before there was any development work done there, and that this classification has been partially borne out by test wells of the Associated Oil Company. Five principal factors contribute to the belief in the presence of oil almost throughout the area, viz.:

"(a) The phenomenal richness of the portions of the Temblor Range oil field adjoining the Elk Hills on the south, southwest, west, and northwest;

"(b) The almost undoubted presence beneath these hills of the formations that are the source and reservoir of the oil in the adjoining developed areas;

"(c) The structural features of the strata in these hills which are unusually favorable for the accumulation and retention of oil;

"(d) The surface evidences of oil and asphalt pointing to the presence of petroleum below; and

"(e) The proof obtained locally by wells recently drilled of the presence of oil and gas at depth."

Following this, Mr. Anderson states that the district selected represents a separate and distinct area from other oil districts, making it practically certain that it cannot be drained of its oil by outside operations. He states that the oil found in the Associated wells is from 27 to 29 degrees Baume, which he considers an additional advantage. A disadvantage which he points out is the great depth to oil, which he estimates will be found for the most part at depths varying from 3,000 to 5,000 feet. He indicates a belief that in 25 years it may not be as expensive to drill wells of this depth as at present, considering the constant improvement in drilling methods. His estimate of the amount of petroleum obtainable, which he terms a very conservative one, is 250,000,000 barrels; and he states that it would not be a surprise if the area should furnish twice that amount.

He says in conclusion: "It may be stated that no large compact area of prospective oil lands could be selected, on the basis of present knowledge, in California nor in the United States as a whole, better fulfilling the requirements for such a reserve as respects, (a) Large supply of oil practically guaranteed; (b) An assurance that the supply will be preserved; (c)

Ready accessibility of lines of transportation to the seaboard; and, (d) Position protected from foreign invasion."

Acting on Mr. Anderson's letter, George Otis Smith, Director of the U. S. Geological Survey, recommended the withdrawal of the 38,069 acres in Elk Hills, under discussion, and on August 10, 1912, the Secretary of the Interior referred the matter to President Taft with favorable recommendation. The lands were withdrawn. Then followed caustic criticism in various publications in California, especially in the Oil World, which made necessary another letter from Mr. Anderson to Director Smith, this letter being largely a vindication of Mr. Anderson's judgment in the selection of Elk Hills, and mentioning that a recommendation for a supplementary reserve was being prepared. On November 7, 1912, Mr. Anderson wrote again to the Department of the Interior giving it as his conviction that it would be highly advisable to add to the Elk Hills reserve; also that it seemed advisable to him to reduce his former estimate of the procurable oil in Elk Hills to 100,000,000 barrels, which is a reduction of 150,000,000 barrels. This reduction in his estimate was made because of further geological study of the section which convinced him that, "It is safer not to count at all on a considerable portion of the Hills." The letter states that if there are 150,000,000 barrels less than estimated this must be provided for by another, supplementary reserve. For this reason Petro-

leum Reserve No. 2 is recommended. Petroleum Reserve No. 2 is along the Buena Vista Hills, south of Elk Hills. This is proven territory. Its drawback is that the odd-numbered sections are held by the Southern Pacific Railroad; that the question to title is in a tangle and finally that all the even-numbered sections have been drilled on by private individuals and corporations, along the central strip of the hills. The advantages of this second reserve are its known tremendous productivity, the fact that the Government may possibly recover the odd-numbered sections from the Southern Pacific and that the even-numbered sections "lie on or near the top of the Buena Vista Hills dome, and it seems probable that the oil reservoirs in this structural position will be less affected by operations on adjacent portions of the dome than they would if the reserved sections lay on the "flat." Further reasons are adduced by Mr. Anderson for making the second withdrawal, consisting of 47 sections, all of which are of great cogency but which we have not space to give in detail. The result of the recommendation was the creation of Naval Petroleum Reserve No. 2, signed on December 13, 1912, by President Taft. Of this Reserve but 38 per cent is public land to which title is unquestioned, 51 per cent having been patented to the Southern Pacific in 1894 and 1896, and 11 per cent having since been patented to individuals or corporations other than the railroad, previous to the first withdrawal.

California Production for and Field Operations During May, 1913

Consumption Again in Excess of 8,500,000 Barrels.

Paralleling March Figures. Daily Shortage is

15,095 Barrels, While Daily Average Output Declines 3,565 Barrels.

California's total oil production in May was 8,098,138 barrels, consumption being in excess of this great output by 467,941 barrels. Consumption consequently totalled 8,566,079 barrels, this being but 12,151 barrels shy of the March consumption figure, the greatest to date. At the present gaining rate the May consumption figure will probably be eclipsed by the July or August figures, but not in all probability, until July. June being a short month, the probability is that July will show a gain over May.

There was a decrease in daily production in May, as compared with April, of 3,565 barrels, although the total output was 154,287 barrels larger for May than for April—due to that annoying extra day. There was an increase in the daily average consumption of 6,166 barrels over the April figure. The total consumption increase for May was 461,309 barrels. With the decreased daily average output and the increased daily average sales, the daily shortage grew to 15,095 barrels, or 9,731 barrels larger than during April, so that 467,945 barrels were drawn from stocks during May.

The total storage on hand on May 31 was 46,367,329 barrels.

Standing of the Various Fields.

The only fields in the State making any appreciable material gain in daily output were Lost Hills and Lompoc. The Lost Hills' daily production is now 9,598 barrels, an increase of 1,368 barrels over the daily average in April. This field's output is growing very fast indeed, being almost 300,000 barrels this past month. In fact, at the present rate of increase, Los Hills can be reasonably expected to produce about 4,000,000 barrels this year. A gain in Lompoc's output was by no means unexpected, but the increase itself affords considerable room for satisfaction to operators in that district. A gain of 530 barrels per day in a Coast field (outside of Santa Maria) is something noteworthy. Kern River made a small jump in daily production 225 barrels; Newhall gained 13 barrels daily; Los Angeles, 6 daily, and all the other fields show a decreased daily output excepting only Watsonville and Summerland, which record no changes. The losses in daily production shown by the various fields where decreases took place are: McKittrick, decrease 488 barrels daily; Midway, 1,709 barrels daily; Sunset, 838; Coalinga, 312; Puente, 15; Santa Maria, 1,310; Santa Paula, 29; Salt Lake, 89; Whittier, 189; Fullerton Brea, 734 barrels daily. The average daily output of each field is shown in the table herewith, together with that of the month previous. The decreased yields are,

for the most part, in fields where it is apparently only a matter of putting more idle wells back on production, although last month there were 77 more wells pumping than in April. The average production per well for the month of May was 1,367.01 barrels; daily average, 44.09 barrels

Rigs, Wells, Drilling, Etc.

There was a slackening in rig building in May as compared with April. Rigs built, April, 83; May, 51;

decrease, 32. Difference in number of wells drilling on last days of April and May, 5; drilling, May 31, 392. Number of wells producing is swiftly approaching 6,000, being now 5,924, a gain of 77. As there were but 42 completed during May, this indicates 35 placed on the producing list after having been shut down, for whatsoever reason. Number of completions is two less than for April. Not a single hole was abandoned in May as compared with eight in April.

Following is our regular table giving all the usual details:

FIELD	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Daily Av. (To within 1-2 Bbl) April	Prod. Ea. Field May	Production for Month
Kern River	1	7	1,663			29,680	29,885	926,435
McKittrick	7	18	303	3		18,710	18,222	564,889
Midway	18	117	808	16		81,482	79,773	2,472,977
Sunset	2	40	266	2		16,515	15,677	485,987
Coalinga	5	63	895	5		52,978	52,666	1,632,646
Watsonville			5			75	75	2,325
Lompoc		2	28			2,815	3,345	103,695
Santa Maria	1	14	178	3		14,990	13,680	424,080
Summerland			122			171	171	5,301
Santa Paula	2	24	329	7		2,581	2,552	79,112
Newhall		1	73			302	315	9,764
Salt Lake	1	12	291			7,664	7,575	234,821
Los Angeles			400			1,051	1,057	32,581
Whittier-Coyote		18	147			4,652	4,463	139,353
Puente		1	50			80	65	2,000
Fullerton-Brea Canon	2	57	294	1		22,819	22,085	684,648
Lost Hills	12	16	72	5		8,230	9,598	297,524
Salinas Valley		2						
Repetto								
	51	392	5,924	42				8,098,138

Summary

	Barrels.
Stocks, April 30, 1913.....	46,835,270
Production, May, 1913	8,098,138
	54,933,408
Consump., May 1913	8,566,079
	46,367,329
Stocks, May 31, 1913	46,367,329
Daily Ave. Production	261,230
Daily Ave. Consumption	276,325
Daily Ave. Shortage	15,095

Palmer Union Oil Company.

Under the direct supervision of President Frank L. Browne, Well No. 11, situated 800 feet east of the famous No. 2, and a like distance north of No. 3, is rapidly nearing completion. At last reports No. 11 was down 2,900 feet, and into the oil-sand a distance of 50 feet. The company is looking for the big gas pressure found in No. 2 at any time. This well is the first ever to be drilled in the entire Santa Maria field using the rotary. From the very first, good progress has been made, much to the surprise of any number of old-timers, who, favoring the standard tools in exclusive use in Santa Maria until this time, have been busy predicting failure. The well is being drilled with oil instead of water, which is generally used. Great hopes are centered in this well by many more people than the management of the Palmer Union. Nearly operators are watching the "experiment" very closely and its success will go a long way towards installing the rotary in general favor in this field. The Palmer's management expects the well to be completed at an early date. Total daily output of the Palmer Union is now stated to be 1,000 barrels.

Digest of General Petroleum's Report

General Petroleum Co., this city, has announced its financial plans, together with a resume of what it has so far accomplished and what it expects its earnings to be. Company is evidently in need of money as it proposes to put on deposit \$15,000,000 of stocks and bonds combined to secure \$3,000,000 of 6 per cent convertible serial notes which it proposes to issue, these notes to mature in 12, 18 and 24 months. To date the com-

pany has issued \$12,305,000 in gold bonds and \$34,814,600 in common stock. The company has an authorized bond issue of \$25,000,000, and its capitalization is \$50,000,000. It holds 23,694 acres of land in California, 160 producing wells, 26 wells drilling and 6 being rigged for drilling, and has a present production at the rate of 3,450,000 barrels per year. It owns 23,000 acres of land in Mexico, in good territory, and 73 per cent of the capital stock of the General Pipe Line Company. General Petroleum controls the Trumble Refining Company, has two operating refineries and two under construction; 750,000 barrels of oil on hand and steel storage tanks of about 2,000,000 barrels capacity. The company has contracts with producers whereby it secures 3,000,000 barrels annually, another contract with the Santa Fe Railway providing the delivery of a like amount for three years; sales contracts for 5,000,000 barrels and a contract supplying the Santa Fe Company's fuel requirements for three years in return for the Santa Fe's oil. Estimated net profits at present prices for the current year are \$1,254,720. Larger profits are anticipated as oil prices increase. The company also holds its famous option on the Union Oil Company control.

NOTES.

Associated Oil has ordered from the Union Iron Works Co., of this city, what will be the biggest tank steamer in service on this Coast. Cost will be \$1,000,000. Capacity, 62,000 barrels. Length, 410 feet between perpendiculars. Speed, loaded, 10 knots; horse power, 3,500. The vessel will carry every life-saving appliance and will be furnished "up-to-the-minute." She will carry a crew of 41 persons.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

CHARLES C. WRIGHT, - - - - - Editor and Publisher
PAUL W. PRUTZMAN, - - - - - Consulting Scientific Editor
A. S. COOPER, - - - - - Contributing Scientific Editor

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Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

The ***
*Derrick's
* * Creed

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

Important Decision of United States Judge.

On June 14th one of the most important oil land decisions of recent years was handed down by Federal Judge Riner in the United States District Court sitting at Cheyenne, Wyoming. The suit was that in which the Federal Government was seeking title to the Midwest Oil Company's lands in the Wyoming oil fields, which lands were acquired after the first withdrawal order of President Taft, September 27, 1909, and before Congress passed its act authorizing the President to withdraw public lands from entry, this latter act being passed June 25, 1910. The fact that the President's authority to withdraw these lands was questioned and the additional fact that Congress had deemed it necessary to pass the act of authorization are the main reasons for the loss of the Government's contention. Judge Riner having held that the act of Congress was **not** retroactive; therefore, that those who settled on lands withdrawn on September 27, 1909, **before the act of authorization passed by Congress on June 25, 1910**, were entitled to such lands if they had fulfilled the other requirements of law.

Title to millions of dollars worth of oil lands is affected by this decision. Government reservations in California covering some of the very richest oil lands in the State are affected by it, among them the Petroleum Naval Reserves. This decision will, of course, be appealed by the Government to the Supreme Court. But, a precedent has been created; and a precedent always has weight in a court of law. Therefore, operators who are operating on lands withdrawn by the first withdrawal order, but who commenced their operations before the second, have good grounds for expecting the validation of their titles, when they have complied with the regular legal requirements necessary to obtain public property by development.

"Zerolene" is Vouched for by the Standard Oil Company.

Legislative Measure Signed by Governor.

It was generally believed, by those who considered themselves in a position to know, that Governor Johnson would affix his signature to the Sutherland bill, which provided for oil protection from water troubles. For some unknown reason the Governor did not sign this measure. The measures affecting the oil industry that he did sign were the three making oil pipe lines common carriers, to-wit: the Hewitt, Carr and Campbell bills; the so-called Blue Sky law and the anti-discriminatory measure which forbids the sale of a product at a smaller price in one section of the State than in another. All the laws signed by the Governor are understood to have had his backing previous to passage and final approval was generally foreseen. The governor's failure to sign the Sutherland measure is cause of much unfavorable comment among oil men in the West-side fields.

Oil Producers' and Consumers' League.

(By Guy H. Salisbury.)

The Oil Producers' and Consumers' League, a California corporation, was organized in Los Angeles early in June. Colonel "Tim" Spellacy, S. C. Graham, Francis J. Heney, George D. Roberts and J. W. Jameson are among the leading spirits in the movement. The object of the League is to prevent monopoly in the production, transportation and marketing of petroleum oil, and of the products thereof, within the State of California; to see that the laws are enforced that have been enacted by the State Legislature, governing the Common Carrier bill; to protect the producer, great or small, from technical points that may be raised by pipe line managers, who may try to keep out from the pipe line the oil of a producer on "account of prior orders." It is expected a system will be inaugurated that will show all oil listed to be run by each pipe line company, and also, all orders ahead that might be used to sidetrack some of the smaller shippers. The purpose of the League is to watch the pipe line companies and see that the independent producers secure their rights under the law that has just been passed and signed by the Governor. Francis J. Heney has been appointed attorney for the League, and is now in Washington looking after the interests of the oil men in the League. The Railroad Commission will have to attend to the detail work that will rule in this matter. The League's further purpose is to watch the pipe line companies, that no discrimination may be practiced upon the League's members.

Dividend Notice.

THE GEMAN SAVINGS & LOAN SOCIETY.

(The German Bank)
526 California Street

Mission Branch, corner Mission and 21st St., Richmond District Branch, corner Clement St., and 7th Av. Haight Street Branch, corner Haight and Belvedere Streets.

For the half year ending June 30, 1913, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, July 1, 1913. Dividends not called for are added to the deposit account and earn dividends from July 1, 1913.

GEORGE TOURNY, Manager.

Tankers for English-Mexican Trade.

The largest oil tanker in the world is the "San Fraterno," a steel steamer 548 feet in length, with a dead weight capacity of 15,500 tons. The vessel is the property of the Eagle Oil Transport Company, a subsidiary of Pearsons, and an affiliation of the Mexican Eagle Oil Company. The "San Fraterno" was launched on Washington's Birthday of this year, and is now in the Mexican oil carrying trade. Nine other vessels of exactly similar dimensions are under construction for this company, which also has nine tankers of 9,000 tons capacity under construction, or eighteen in all, building, with a total capacity of 220,500 tons, not counting the "San Fraterno." This shows, in a way, the preparations the British are making to control the Mexican oil industry, or at least to purchase Mexican oil.

High Gravity Men's Organization.

The Oil World is authority for the statement that Stanley W. Morshead has succeeded in rounding a large number of the independent high gravity producers into an organization "for the purpose of protecting their own interests, getting higher market prices by direct control, and furthering the prospects, generally, of high gravity oil." The new organization will be affiliated with the Independent Oil Producers' Agency. The companies reported in the movement so far are: Mohawk, Caribou, W. K., Sauer Dough, Four Oil, Coalinga National, Turner, Coalinga Oilfields, Ltd., Camwell and others." The Derrick has not been able to verify this story in detail, but the idea of an amalgamation of the high gravity interests is by no means a new one and is considered entirely possible.

Exports of Oil from San Francisco in May, 1913.

The total exports of all classes of mineral oils from San Francisco during May fell short of the April shipments by close to 2,500,000 gallons, but the prices received brought the total receipts to approximately \$30,500, more than was realized from the April sales. The comparative figures are: Shipments, April, 24,579,438 gallons; May, 22,197,937 gallons. Receipts, April, \$650,245; May, \$681,742. The June shipments will probably be heavier than for either April or May. The shipments for May of this year show a very large gain in the quantity of every commodity shipped, over exports for the corresponding month in 1912.

Following is the regular table presented by the Derrick, showing the various exports in detail, and the values of each kind of oil exported:

	Quantity	Values
Crude	507	12
Illuminating	9,598,087	439,773
Lubricating and Paraffin	102,972	20,784
Naptha, Gasoline, etc.	63,323	8,742
Residuum, Gas Oil, and Fuel Oil, etc.....	12,433,048	212,431
Totals	22,197,937	\$681,742

The Shamut Oil Co., on Section 12, 20-14, have built an "air dome" on their property, in the center of a grove of umbrella trees, for the amusement of the company's employees. The stage is 20x24 feet. "Local talent" will supply the amusements to be given here. The S. P. Company's new passenger station, at Coalinga, is rapidly being completed. The Monterey County end of the Coalinga-Parkfield road will be completed about August.

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KEEPING UP WITH



New Home of the Standard Oil Company of California,
N. W. corner of Bush and Sansome Sts.,
San Francisco.

The Standard Moves Into Its New Home.

Early in June the Standard Oil Company of California moved its headquarters from the Sheldon Building, in this city, to the new Standard Oil Building, located on the northwest corner of Bush and Sansome streets. Work on the new home of the Standard was not entirely completed when the old offices were abandoned, but was sufficiently advanced to cause everyone to make the move with great pleasure.

The building is now (June 20), practically completed. Rising ten stories from the sidewalk, it impresses on the observer the beauty and strength of its design, the purity of its architecture, the freedom from unnecessary "ginger-bread" decoration, its massiveness and durability. It is as fine a building as there is in San Francisco—and that is saying a great deal. But more, it is unquestionably the most beautiful and most conservative office building in the city which devotes nine entire floors and basement to the housing of the officials and aids of any one corporation. It was planned that every floor, from the basement to the roof was to be occupied by employees of the company, but it appears certain that the top floor will be occupied by several prominent attorneys, since a lease is said to have been granted for this purpose. The ground floor is devoted exclusively to the company's San Francisco agency and has, in addition to the salesroom, a display room for

the exhibition of samples of all the products of California oil. In the basement are located the company's laboratories for the testing of road materials and other scientific purposes. Every floor of the new building was designed and sub-divided to exactly suit the particular needs of the various departments which now occupy each.

The inside of the building is a revelation in office architecture. The spaciousness of the halls immediately contrasts itself with the ordinarily cramped aisles of the average business building where offices are rented. The interior decorations are rich and conservatively beautiful. The entire building impresses with its quiet magnificence, its taste and harmony, proving that a business building can be a structure of beauty as well as one possessing utility and strength. Speaking of strength brings to mind the weight of the steel used in the frame, which is undoubtedly much more substantial than the average structural steel work in a building of this size. In a word, it is built to last.

The Standard's new home is quite in contrast to the first office occupied by the company in San Francisco. Away back in 1878 the Standard Oil Company's San Francisco organization consisted of "a manager, a clerk and an office boy," occupying but two rooms. Today the company's headquarters cover 88,000 square feet of floor space, housing 420 people, while the total number of its employees on this Coast is now almost 7,000 persons.

In the "Standard Oil Bulletin," elsewhere referred to, a brief description of the new Standard Oil home may be found—one which will be of more interest, perhaps, than anything we might write. For this reason we have clipped this matter for our readers, appending it herewith:

"The first two stories are of light gray limestone on a two-foot base of polished granite. The eight upper stories are finished in pressed brick with terra cotta trimmings, including the cornice.

"The frame is of steel, the floors of concrete and the window frames, doors and trimmings of metal,—fire-proof construction throughout.

"The main lobby and corridors have ceramic tile floors with marble wainscoting for walls and columns, while the elevator fronts and main stairway are of solid bronze of an elaborate design.

"A pneumatic tube service will extend throughout the building, by means of which letters and other papers may be transferred easily between departments.

"The new building is centrally located and convenient to the chief business districts of San Francisco. It is adjoined on the north by the site of the proposed United States Sub-Treasury."

"Standard Oil Bulletin" Makes Its Appearance.

The Standard Oil Company has begun the issuance of the "Standard Oil Bulletin," a neat publication of 16 pages and cover, the first volume of which was issued in May, and which will be regularly published from now on. The May number was an interesting one, with a picturesque color-photograph of the burning of the Pacific Crude Oil Company's gusher (if we are not mistaken), belching flames and smoke high in the air. However, it is not the cover that takes the

STANDARD OIL CO.



The Tank Steamer "El Segundo," the Standard's Latest Addition to Its Oil Carrying Fleet Plying the Pacific Coast.

eye so much, but the contents, especially the "Foreword," by President D. G. Schofield. This foreword gives the reason for the establishing of the Company Bulletin, which is, "primarily the creating of a direct medium of communication with our many thousands of customers and the general public." Also, "it will be the purpose of this Bulletin to keep our customers and the public thoroughly informed regarding all matters of interest of this great petroleum industry." The evident purpose is to give the public its news of the Standard Oil Company direct from the Company itself, and not through newspaper statements, "whose representations have at times been misleading." The statement of the aim of the Company's President is well worth noting for its straight-forwardness and the spirit animating it. We are glad to quote the following from the "foreword," in accordance with our earnest desire to give the "Fair Deal" to every interest in the oil business of this State. President Schofield says:

"We hope that, through the 'Bulletin,' we may be able to give our customers, and the public generally, a clearer understanding of the nature, purpose and methods of our company, so that they may know us directly and personally.

"It is our earnest desire that all officials and employees of the company shall work together in harmony, to the one end of rendering the greatest possible service to the public, not only by maintaining the high quality of our products, but by promptness, courtesy and fair dealing in all the varied transactions incident to the conduct of our business.

"Whatever measure of prosperity our company has attained has been due to the economies of efficient organization, hard work, ex-

perience, and years of loyal, faithful service on the part of our employees. It is by these same methods and qualities that we are endeavoring to serve our customers today.

(Signed) D. G. SCHOFIELD,
President."

The first issue contained an interesting article on the exposition to be held here in 1915, an article by Elbert Hubbard, entitled "Light on the Path," a special photo-feature showing "What the World is Doing," articles on gasoline, the new Standard Oil building, the necessity of petroleum to the farmer of today, and an article on the "Development of the Oil Business in California." Altogether, if the "Bulletin" maintains its quality, it will be a very interesting contribution to the oil literature of this State.

"EL SEGUNDO."

Latest Addition to the Standard's Fleet of Oil Carriers.

"El Segundo," the magnificent new steel steamer named after the Standard Oil Company's refinery at Manhattan Beach, arrived at San Francisco about a month ago, after the 15,000 mile voyage "around the Horn" from Camden, N. J., where the vessel was built. She made the journey in exactly sixty-five days. The "El Segundo" is equipped with wireless, electric lights, automatic fire extinguishing system, automatic fog whistle and other safety devices. She has an ice-making machine and refrigerating plant. She is fitted with an automatic towing machine which adjusts the tow-cable according to the strain placed upon it.

The "El Segundo's" length is 342 feet, width, 46 feet, depth, 27 feet. Capacity is 30,000 barrels, stored in twelve compartments. She is fitted with cargo pumps that discharge her cargo in from 10 to 12 hours. Her fuel bunker capacity is such as to enable her to travel for 30 days without refueling. She is equipped

with the Union Iron Works' "Dahl" oil burning system. Her power is derived from triple-expansion engines capable of developing 2,500 horse-power at 100 revolutions. The heavy power is to enable her to take tankers in tow, as she will transport bulk oil between Richmond and El Segundo and to the main supply sta-

tions extending from San Diego to Alaska. She is now doing service on her first trip since her arrival. The Standard's Marine Department now employs 27 vessels in handling Standard oils exclusively. Another, and even larger tanker, will be ready for duty about the first of August. The new vessel will be named the "Richmond."

Pithy Paragraphs

An investigation of the oil properties in Grand County, Utah, by the U. S. Geological Survey, proved a decided disappointment, the Survey finding the surface indications for oil "less promising than was expected and the development work up to date far from successful."

The Montebello Oil Co. is said to be considering running a pipe line to the town of Fillmore to supply it with natural gas if there are sufficient consumers. The Bardsdale wells of the Montebello are located about two miles from Fillmore, and it is thought that they are fully capable of supplying every home in that vicinity.

The total production of crude oil in Mexico in 1912 amounted to 16,704,734 barrels, or 2,493,244 metric tons, according to figures furnished by the British legation at Mexico City. This is still some distance from California's 90,000,000-barrel output. "Quite some" distance.

According to the Fillmore "Herald," apparently a very reliable paper, the net income of the Montebello Oil Co., for 1912, amounted to \$189,377.28. The total production was approximately 219,845 barrels, the gross receipts from this oil totaling \$236,676.30. Operating expenses, including royalties, totaled \$27,139.39. The company now has about 36 producing wells and holds more than 2,000 acres of proven and prospective oil lands under lease in Ventura County.

The St. Helens Petroleum Company is said to have gone into a highly productive sand at a depth of close to 3,000 feet, with their Well No. 1 on the Anaheim lease in La Habra Valley.

Standard Oil is drilling its fifth well on the Emery Ranch in the Coyote Hills.

Technical Paper 49, Petroleum Technology 10, of the Bureau of Mines, has as its subject, "The Flash Point of Oils—Methods and Apparatus for Its Determination," the authors being Messrs. Irving C. Allen and A. S. Crossfield. This is a most interesting and thorough work, and covers more ground than we should care to even try to review. Every petroleum chemist should have this paper in his reference library.

Condensations.

Standard Oil of California paid its regular quarterly \$1,125,000 dividend on June 14th.

The California Oilfields, Ltd., earned more than \$750,000 last year and paid dividends of 30 per cent on the capital stock.

S. Pearson & Sons, owners of the Mexican Eagle Oil Company and the Eagle Oil Transport Company, are reported to have secured a concession from the Government of Columbia giving them the exclusive right to develop all the oil fields in that republic not now privately owned.

The Dutch tanker "Kessler," in the service of the Asiatic Petroleum Company, arrived in San Francisco early in June with a cargo of 3,000,000 gallons of gasoline for the American Gasoline Company, the Asiatic Petroleum Company's California subsidiary. The gasoline was delivered at the company's wharf at Martinez.

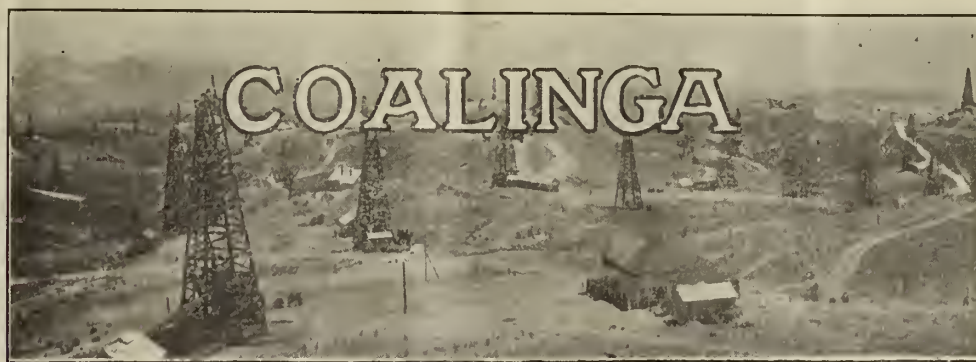
The long rumored competition is now a fact. Sumatra gasoline is here to dispute the market with all home concerns.

The Olig Crude Oil Company is again paying dividends: rate, 4 per cent per month or 48 per cent per year.

The West Coast Oil Company is now paying \$1.50 per share per month, or 18 per cent per year. Stock is very closely held.

Agency shipments of oil in April totalled 1,320,000 barrels, bringing a net return of 35 cents per barrel to the producers. It is expected that the Agency members will soon be getting more money than at present as the contract whereby the American Oilfields and American Petroleum Companies obtained 50 cents per barrel, regardless of what the other members received, has now expired. This will bring up the general average return to other producers.

The eighth annual convention of the Natural Gas Association of America, held in Cleveland, Ohio, in the latter part of May, was attended by gas men from all over this country and Canada, and was considered by all means the best convention the association ever held. New officers and directors were elected and numerous papers of a most interesting nature were presented. G. W. Barns, general manager of the California Gas Company, of Los Angeles, was the only Californian elected to the directorate.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Turner Well Extends East Side Boundary.

The Turner Oil Company's Well No. 6, on Section 2, 20-15, came in about midnight, June 3rd, at 3,520 feet, with 4½-inch casing. The well was not finished and the flow was a little unexpected. The initial flow of oil was estimated at from 7,000 to 10,000 barrels per day. A very heavy gas pressure accompanied the flow, but the well was fairly under control for the first four days. On the fifth day it was thought best to try to cap the well, and a contract was closed with A. C. Mortenson to cap it with a Mortenson Well Capper. The next afternoon the capper was hauled out to the property and towards night the well was brought under control. Not having a 4½ inch capper in stock, a 6½-inch was "bushed" to fit the casing. Mr. Mortenson had capped the Buick and Pacific Crude gushers in Midway, but the gas pressure in the Turner well was harder to overcome than in the Midway wells. The Turner well is under perfect control, the oil going into the tanks and thence shipped direct, as it is free from sand, water and silt. The gravity of the oil is 31 degrees Baume, and when the well was gushing unrestrained, as the oil would strike the ground it would disappear at once. When the deluge came a large earth reservoir was made in a hurry to catch as much of the oil as possibly could. Two iron tanks of 250 barrels capacity each were standing near the derrick and these were filled by the spray that was shot out of the casing and passed over the tanks. The well is situated to the east of the road going over the W. K. hills, and is west of the direct road to Fresno, lying near the north line of the southeast quarter. This well extends the field to the east, lying on the east side of the Coalinga Anticline, and the depth not being excessive, 3,520 feet, with the modern methods used in drilling, other companies in the locality will be encouraged to resume operations. The Standard Oil Company, near the center of Section 36, 19-15, has Sontag Well No. 5 drilling; other wells in that vicinity which have not been completed, and have laid idle waiting for something to turn up, will now receive attention. The Turner well, at last reports, was making over 3,600 barrels per day by actual gauge, having dropped from a 10,000 production to a steady 3,600-barrel daily output. Turner's Well No. 3 was drilled into a brown shale with a small production of very light oil, said to be 42 gravity. This well is directly west of Well No. 6 making it appear that No. 3 is on the very apex of the anticline. The two wells near the big well are about 200-

barrel pumping wells, not in the sand No. 6 is making oil from.

Kern Trading & Oil Co.

The K. T. & O. Co.'s No. 21, in the southeast corner of Section 35, 19-15, is 3,370 feet deep with 10-inch casing. This well has been put down very rapidly—at the rate of 23 feet per day. Well No. 10, on the same section, was also drilled in record time to a depth of 2,595 feet. The use of standard tools with a circulator has been the means whereby the company has been enabled to establish the record for deep holes in this field. Where the standard circulator system was used, in connection with the Keck swinging spider to move the casing while drilling in cavy formation, or running sand, no time was lost in moving casing; with the casing line on the calf wheel, and seven lines in the derrick, with casing hook on long links of the swinging spider, the pipe was kept moving when required without stopping the tools, an advantage readily recognized by any driller or operator. This combination has been very successful on the Kern Trading & Oil Company's holdings on the east side field of Coalinga where the wells are deep.

On Section 1, 20-15, Well No. 1 C is about 1,720 feet deep with 15½-inch casing, nine feet free with a circulator. On Section 11, 20-15, Well No. 1 is about 1,210 feet deep with 15½-inch casing. These wells are all in what might be termed the "new light-oil field" in which wells of high gravity, and good producers are coming in regularly.

On Section 7, 21-15, the company's No. 1 well is cemented at 3,000 feet; 8¼-inch casing. Hole passed through 70 feet of oil sand which will be tested as soon as the cement has set.

On Section 1, 10-15, Well No. 12, which was spudded in on April 19th, is now 850 feet down, 15½-inch casing. This is 4,000 feet territory. The company lost a rig on Section 3 20-15, by fire early in the month. A 106 foot derrick is being built to replace it. Well No. 15, on Section 11, 19-15, was recently completed at 1,655 feet and started off producing 700 barrels daily. Gravity, 21 degrees Baume.

More than 32,000,000 barrels of oil was used as fuel by the railroads of this country in 1912. The total length of oil-operated railroads is given as about 28,000 miles.

Coalinga's Quicksilver Mine Making Nice Progress.

The "Coalinga District" possesses more than one kind of wealth.

The Kings Quicksilver Mining Company, operating on Section 20, 23-16, Kings County, have driven a tunnel into the hill 400 feet in an easterly direction. The tunnel has cut the ore-vein about 150 feet below the surface outcrop. The vein at this point runs about north and south. The manager reports that there is enough ore in sight, blocked out, to run a 30-ton furnace for ten years; 100,000 brick have been burned on the ground, under contract with Graycroft, of Fresno, and one more kiln is being made ready to burn. A Scott furnace will be set up. A. W. Scott, of San Jose, is the inventor of the furnace and has the contract to install it. Work will be started about July 15th. All the material has been ordered, including a concentrator with a pan action, to be built by George A. Scott of Oakland. The concentrator will be constructed at the Bunting Iron Works of this city. A "Huntington Mill," 50-ton capacity, with all latest improvements, has also been ordered. The company is a close corporation, have been quietly working on the property for more than the last year past. George W. Warner, of Coalinga, is general manager. He has completed a road into the property, connecting with the Coalinga-Park old "from Valley-to-Sea" road. This property has long been a small producer in the hands of one man, but now that capital has been interested in the enterprise we look for a good developed property in the very near future.

On June 11th the United Development Company held its fourth annual stockholders' meeting. The new board of directors is constituted as follows:

George D. Roberts, O. D. Loftus, J. L. D. Walp, Fred E. Windsor and Guy H. Salisbury. The board of directors organized with George D. Roberts as President; O. D. Loftus, Vice-President; Guy H. Salisbury, Secretary-Treasurer; the Bank of Coalinga was again selected as the depository for company funds.

The company's Well No. 1, Section 17, 20-15, now being re-drilled, is down about 2,800 feet, where the water will be cemented off as soon as possible.

The Progressive Oil Company, Section 34, 20-14, Well No. 2, is over 535 feet, 8 1/4-inch casing; the hole is making considerable gas reports the manager. The hole will be drilled to 800 feet; the formation indications suggest oil at that depth.

The Coalinga Kettleman Oil Company, lately operating on Section 2, 22-17, will remove all its casing and material from the Kettleman Hills to a point one mile north of the townsite of Lost Hills. The casing in the hole is being satisfactorily pulled out.

Coalinga-Mohawk's No. 1 continues to make 400 barrels daily; gravity is 30.3 at the tanks. No. 6, on Section 12, 20-15, is making good progress.

W. K.'s Well No. 17, on Section 2, 20-15, is close to 1,775 feet deep.

The Potters have just completed Well No. 3, on the south line of Section 35, 20-14, just north of the shallow wells on Section 2, 21-14. Well No. 4 will be started right away. These wells are about 350 feet in depth and produce an oil excellent for lubricating stock.

The "Future Success Oil Co." has taken over the Parkfield Development Co.'s holdings in Section 18, 23-15, Parkfield District, and will be operating in a very few days.

The well of the Le Roy Oil Co., on Section 2, 21-14, is down about 75 feet; 10-inch casing.

The Marion Oil Co.'s Well No. 1, on Section 6, 21-15, is being re-drilled by Clyde Martin on a contract whereby he receives treasury stock of the company in payment for his services. The hole is now in excellent condition; down 1,990 feet and will soon be cemented. At 2,100 feet the well will be completed in the oil sand. Formerly this was a good producer, making 300 barrels per day.

Stimulated by the strike of the Turner Oil Co.'s No. 6, the Southeastern Limited Oil Company, formerly operating on Section 18, 20-16, to the east of the Coalinga Anticline, will probably resume their operations. Their well was "left standing" at 4,100 feet after passing through a light oil sand.

The Wilcox Fleishacker Well, Section 12, 20-15, down 4,630 feet, is expected to hit the sand at about 5,000 feet. "Do deep wells pay?" appears to be affirmatively answered by these operators.

Zier Oil Co., Section 1, 20-14, now has 18 wells producing. The lease is run with 12 electric pumping motors of the latest pattern, capable of pulling the well and cleaning out. Superintendent W. Redman claims he is able to increase the production with the motors, as the even, steady stroke of the beam with the power from the motors overcomes any waste motion, as with steam. In case a belt slips off, as sometimes occurs, or the rods part or get stuck, instead of the engine running away, the motor stops dead, an advantage over steam.

James P. Sweeney, of San Francisco, and A. J. Polak, of Taft, have been in this field inspecting the Canadian interests of "Pat" Welsh, of Vancouver, B. C. They called at the Canadian Coalinga, examined the property, looked into the working conditions, and with Superintendent Cox, went to the British-California, on Section 16, 20-15, took notes of conditions there and then visited the Vancouver-Coalinga, on Section 14, 20-15. The gentlemen are to report to the parties interested the exact conditions found on the properties.

The Ward Oil Company, Section 12, 20-14, is at present cleaning out and re-drilling its old wells. When present work is finished new work will probably be started, as the company is selling its entire output.

Standard Oil's deep well on Section 15, 28-27, the new Kern River "front," is said to have made as much as 200 barrels in one day. The importance of the discovery, in case this is so, is very great indeed, since it practically means a new field. There has been quite a rush to "get in on the ground boor."

A most excellent treatise, "Repair and Maintenance of Highways," by Lawrence I. Hughes, Ph.D., has been issued by the U. S. Department of Agriculture. The treatise will be of most benefit, in all probability, to rural communities in need of road construction information.

THE STOCK MARKET

Interest in oil stocks is not very strong at this time of the year, as a rule, and the rule is re-inforced by the money market this year. There are certainly anomalies to be found in the quotations. The Petrol Co. asking \$3, for instance, while Union Oil is quoted at from \$75 to \$80. That is only one of a good many strange market features, as the quotations will show:

Name.	Bid.	Asked.
Amalgamated Oil	80.25	.....
Associated Oil Stock	38.25	40.00
Caribou .....	.75	.90
Coalinga Central .....	.20	.....
Illinois Crude .....	.....	.05
Maricopa National .....	.....	.18
Maricopa 36 .....	.16	.....
Monte Cristo .....	.54	.70
Occidental .....	.25	.....
Oreutt Oil .....	.70	.....
Pacific Crude Oil .....	.25	.....
Pyramid .....	.08	.15
Record	100.00	.....
Republic .....	.10	.15
S. W. & B. ....	.15	.....
Sterling .....	.....	1.00
Turner	1.15	.....
Wolverine .....	.50	.....
W. K. Oil Co. ....	.....	2.00
Storage Certificates .....	.....	.31

Los Angeles Quotations.

Name.	Bid.	Asked.
Producers—		
Amalgamated Oil	85.50	87.50
Associated Oil	38.75	.....
Bear Creek Oil & M. Co. ....	.62½	.....
Brookshire Oil .....	.....	.65
Calif. Midway Oil Co. ....	.11½	.....
Central .....	.....	.85
Columbia .....	.....	.85
Continental Oil .....	.....	.25
Euclid Oil Co. ....	.....	.20
Fullerton Oil	2.00	3.00
Globe .....	.01	.03
Jade Oil Co. ....	.06	.....
Maricopa Northern .....	.05½	.06
Maricopa Queen Oil Co. ....	.....	.50
Mascot Oil Co. ....	.....	.60
Mexican Pet. Ltd. "Pfd."	84.00	90.00
Midway Northern .....	.19¼	.19½
National Pacific Oil Co. ....	.03¼	.04
New Pennsylv. Pet. Co. ....	.25	.55
Olinda Land Co. (Oil) .....	.27	.....
Penn. Midway Oil Co. ....	.07½	.....
Rice Ranch Oil Co. ....	.85	1.50
The Petrol Co. ....	.....	3.00
Trader's Oil Co.	39.00	48.00
Union	77.37½	77.62½
Union Provident Co.	84.00	89.00
United Petroleum	84.00	87.00
United Oil Co. ....	.11	.17
West Coast Oil Pfd.	90.00	.....
Western Union	70.00	85.00

Gasoline From Gas in Santa Maria.

The Pinal-Dome Oil Co. is erecting a large gasoline-from-gas plant with an estimated capacity of from 2,000 to 3,000 gallons per day, the plant consisting of two Laidlow-Dunn-Gordon engines which will compress 2,250,000 cubic feet of gas daily.

The Union Oil Company, it is said, will shortly install a very large compressor in addition to its present plant.

The Purity Gasoline Co. is turning out from 1,000 to 1,100 gallons daily.

NOTICE

LATEST REVISED MAP OF THE Coalinga Oil Fields

(SIZE 27 x 48 ins.)

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Prospect Holes in San Diego County.

The Otay Oil Company, operating on the northeast quarter of Section 30, 18-1, San Diego County, is reported down 2,200 feet with a good oil showing.

The Lo Tengo Oil Company's well on Section 31, 18-1, San Diego County, one and a half miles west of the Otay Well, was down 2,840 feet at last report, with what are said to be good prospects of getting oil in the near future.

The well of the Tia Juana Valley Oil Co., located five miles southwest of the Lo Tengo, is down somewhat below 600 feet.

The Balboa Oil Co., drilling in Mission Valley, three miles north of the business center of San Diego (inside the city limits) is down 2,660 feet with considerable gas and a little oil showing.

The hole of the San Elijo Oil Co., near the town of Sorrento, is down 1,100 feet. The well is being re-drilled, it having formerly been down 1700 feet.

At Encinatas the Pan-American Oil Company's well is down close to 2,100 feet. Condition of the hole not known. The South Fullerton Oil Company's well is down 3,630 feet, having passed through a thin oil stratum at 3,615 feet.

Report on Seaboard Oil & Transit Company.

The Board of Directors and the "Advisory Committee" of the Seaboard Oil & Transit Company have issued a joint report, under date of June 10th, to the stockholders and creditors alike, the report also embodying a special report of the company's Mexican properties by C. L. Flack, a statement by Mark A. Spellacy, of Tampico, Mexico, on the value of the Mexican holdings, and a map showing these holdings. With the report comes also a notice of an assessment of one cent per share. This falls delinquent August 9th and will be sold unless paid on September 8th. As all the shareholders of the company will receive the report, there is no use in a detailed review of same in this magazine; it is sufficient to say that the Mexican properties are given a very high recommendation, while the necessity for money is gone into thoroughly. In fact, in his letter to the creditors, Director Flack recommends that "in the event they (the shareholders) should refuse to develop the property, I believe we, as creditors, should form a corporation, take the property for the debts of the company, and develop it ourselves. We are almost certain to get oil." Mr. Flack estimates the cost of sinking a well from \$10,000 to \$25,000. Mr. Flack made the trip at his own expense. Another feature of the report is the recommendation of the president of the Advisory Board and the president of the Company also, that a deep well be drilled on the company's Gate City property, to a third sand encountered in a well of the Ruby Oil Company at 2,145 feet. This well is "doing between 700 and 800 barrels per day. It is light oil." The report of the two boards expresses the conviction that the company should either deepen one of the old wells to reach this oil or put down a new well, the cost of which they give us approximately \$10,000.

It is said that the Standard Oil Company of California may enter the producing business in the Peruvian oil fields.

Union Oil Affairs

Upon the resignation of Robert Watchorn as Treasurer of the Union Oil Company, John Garique was selected to succeed him. Mr. Watchorn remains a director in the company. Rumors of President Lyman Stewart's resignation and a general change in the company's official body continue unabated. The stock of the company, which declined severely, regained some of its former strength upon the issuance of a statement by President Stewart giving it as his opinion that the drop in prices was due to the general financial condition of the country.

"Oilfields Limited."

This company is drilling two new wells on Section 26, 19-15, where it already has two producers making 400 and 800 barrels, respectively, per day; oil 21 gravity. On Section 34, 19-15, two more wells are being drilled. Depth, 3,000 feet; oil, light. Company got a new 450-barrel per day producer during latter part of May on Section 14, 19-15. Well No. 35, on Section 34, 19-15, has been completed at 2,590 feet. The initial output was 1,250 barrels per day. Gravity is said to be about 24 degrees Baume.

Japan's refinery output in 1912 decreased 4,612,297 gallons from the 1911 output. The 1912 output was 62,684,057 gallons.

General Petroleum's Vernon topping plant is handling about 8,000 barrels per day. Work is being rapidly pushed on the plant, the capacity of which, when both "units" are in trim, is 20,000 barrels per day.

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THE OLDEST OIL MAGAZINE IN THE WEST

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST



Vol. 5—No. 12

San Francisco, Cal., July, 1913

Price 20 Cents

IMPOSING FACADE OF MACHINERY HALL, LARGEST "PALACE" AT THE PANAMA-PACIFIC, EXPOSITION, SAN FRANCISCO, 1915.



Machinery Hall is now rapidly nearing completion, the frame-work being finished and the stucco work having commenced. The structure has a frontage of 368 feet and is 968 feet long, the largest building to be erected by the Exposition Company. Each of the three naves shown is 75 feet in width, running the length of the building, and 122 feet high. The machinery exhibit will outclass anything ever attempted.

—→ SIXTH YEAR ←—

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47,454,451 Barrels of Oil Marketed During First Half of 1913

47,221,836-Barrel Output Close Upon Consumption---Only 232,615 Barrels Was Drawn From Storage.

TOTAL STORAGE JUNE 30, WAS 46,389,669 BARRELS

The above gross figures give the situation in California at the close of the first six months of this year. If the present rate of consumption and output continue for the remainder of the year, approximately 95,000,000 barrels of California oil will be consumed in 1913, with production very close to this figure. The following table gives in detail the monthly production and consumption as published month by month in The Derrick:

STATISTICAL TABLE SHOWING PRODUCTION AND CONSUMPTION DURING THE FIRST SIX MONTHS OF YEAR

	Production	Consumption
January	7,582,346	7,526,512
February	7,302,751	6,667,029
March	8,184,809	8,578,230
April	7,943,851	8,104,770
May	8,098,138	8,566,079
June	8,109,941	8,011,831
Totals	47,221,836	47,454,451

Excess of Consumption over Production, first six months of 1913,—232,615 barrels.

WELL OPERATION STATISTICS, FIRST HALF 1913

	Rigs.Comp.	Wells Prod.	Comp.	Aband.
January	60	5638	56	4
February	56	5669	57	8
March	78	5784	54	4
April	83	5847	44	8
May	51	5924	42	0
June	48	5997	64	17
	376	*359	317	41

*Increase over wells producing January 1st.

GROWTH OF CALIFORNIA OIL INDUSTRY

The consumption of California oil the first six months of this year compares with the corresponding periods of the past three years as shown below:

First Six Months of 1913	47,454,451 barrels
First Six Months of 1912	39,678,935 barrels
First Six Months of 1911	34,262,015 barrels
First Six Months of 1910	32,387,372 barrels
Last Six months of 1912	43,730,695 barrels

The increased consumption over the first half of 1910 is here shown to be no less than 15,067,079 barrels; over the same period in 1911 the increase is 13,192,436 barrels; over the first half of 1912 the increase is 7,775,516 barrels; and over the last half of 1912 the increase is 3,723,756 barrels.

While there are monthly fluctuations in both production and consumption, the latter is showing a steadier growth than the former. In view of this fact, who can prophesy the developments of the next six months?

CALIFORNIA EXPORTS

A Review of the June Exports, the Total Shipment During First Six Months of 1913, and Total Shipments of Fiscal Year Ending June 30th.

The greatest export year in the history of the California oil industry came to an end June 30, when the total exports of all classes of oils for the fiscal year amounted to 253,688,309 gallons, valued at \$7,166,844. The total exports from the entire United States during this period came close to two billion gallons, amounting to 1,947,746,232 gallons, valued at \$134,504,726. These are the official figures furnished by the Department of Commerce. California's exports are, roughly, about 15 per cent of the total foreign sales. The money returns appear to be approximately 8 per cent of the total receipts. California's gain over last year's exports is huge, totalling 82,496,214 gallons, valued at \$2,549,191.

The figures for the exports for the month of June, which brought the fiscal year to its close, show shipments to have been larger in June than during any previous month this year, totalling 31,250,260 gallons of all classes of oils except crude, valued at \$793,734. No crude was shipped. Illuminating shipments amounted to 8,340,346 gallons, valued at \$399,416. Lubricating and paraffin shipments totalled but 75,867 gallons, bringing \$12,648. Of naphthas and gasoline little needs be said except that the demand here at home is too pressing to cause the marketers to send much of these products away; hence, sales totalled only 26,406 gallons, valued at \$3,973. The big shipments from California are the illuminating and residual oils. These latter, residuum, gas oil and fuel oil, etc., for the month of June, totalled 22,807,641 gallons, valued at \$377,699.

First Six Months of 1913

The total exports from California for the first six months of the year amounted to 137,346,496 gallons of all classes of oils, valued at \$3,754,342. Total crude shipments were small; only 5,657 gallons, valued at \$140. The illuminating exports were almost a third of the total for the six months, amounting to 45,357,268, bringing \$2,121,760. Of lubricating and paraffin oils there were 587,387 gallons shipped, the receipts amounting to \$90,762. The naphtha and gasoline shipments were not great, amounting to less than half the lubricating shipments; 217,061 gallons, valued at \$35,087. As stated elsewhere, the great exports from this State are the illuminating and residual oils; of these classes of oils, first in quantity, if not in value, are the later, consisting of residuum, gas oil, fuel oil, "etc.," as classed by the Government. These oils have now virtually entirely displaced the crude. Practically all the lowest gravity oils are now treated before being placed on the market. The residuum oil shipments for the period under review totalled twice the illuminant exports, amounting to 91,279,078 gallons, valued at \$1,506,298. The residual exports, it will be seen, amount in quantity to approximately two-thirds of the entire shipments.

Details of Shipments the Past Fiscal Year

Of the more than quarter-billion gallon exports of California oils shipped from San Francisco this past fiscal year, over three-fifths were residual oils. The exact residuum, gas oil and fuel oil shipments totalled

155,858,013 gallons, valued at \$2,526,754. Next in quantity and almost doubly valuable were the illuminating shipments, totalling 96,431,943 gallons, valued at \$4,407,547. Lubricating and paraffine oils totalled 993,459 gallons valued at \$169,989, while naphthas, gasoline, etc., totalled 393,404 gallons valued at \$61,776. Crude exports amounted to only 11,487 gallons, for which \$778 was received. The gain in quantity over last year's shipments is 82,494,214 gallons; the gain in value is \$2,549,191. Following is a comparative table showing the total shipments of all classes of oils during 1912 and 1913:

	1912		1913	
	Gals.	Dols.	Gals.	Dols.
Crude	48,132,691	698,994	11,487	778
Illuminating	87,078,947	3,242,154	96,431,943	4,407,547
Lubricating and Paraffine	575,503	122,438	993,459	169,989
Naphthas, Gasoline, etc	198,241	7,192	393,407	61,776
Residuum, Gas Oil, Fuel Oil, etc.	35,206,713	516,875	155,858,013	2,526,754
Totals	171,192,095	4,617,653	253,688,309	7,166,844

Palmer Union Oil Co.

Well No. 11, which was mentioned in the last issue as being 50 feet into the oil sand, and which was drilled with a rotary using oil instead of water, has been completed. The initial production amounted to 200 barrels per day, but this increased until at last reports the output was 300 barrels per day, according to George L. Walker of the company. The company has hopes that this well will increase steadily until it becomes a flowing well.

Santa Maria Oil Fields.

Santa Maria Oil Fields, Ltd., No. 2 well, directly across from Palmer Union No. 5, has increased from 100 barrels per day to 500. The increase has come since the conquering of the heaving sands and cleaning out of the hole. Well No. 7, which was drilled with oil through the oil sands, has been producing 700 barrels daily since brought in, around the first of the year. Drilling through the oil sands with oil seems to be very beneficial to the production possibilities of the wells in the Cat Canyon field. It appears that the water going into the oil sands in a hole drilled by the old water method, generally in use, has a tendency to harden the oil and in other ways to restrict the flow of oil. At least, such is the theory of a number of producers who are using the oil drilling method, and results seems to bear out their opinion. An interesting article on this subject may possibly be secured from several of those using this method, giving the results obtained, and run in an early issue of this publication.

California Production for and Field Operations During June, 1913

Production Increases While Consumption Shows Temporary Decrease; 98,100-Barrel Surplus Is Result

California's total oil production for the month past was 8,109,941 barrels, a gain over the May output of 11,803 barrels. The June daily average output was larger than the May daily average by 9,101 barrels. More than 50 per cent of the additional oil comes from Midway.

Consumption shows a slight reaction from the heavy May shipment, totalling 8,011,831 barrels, as compared with 8,566,079 barrels for May. The combined result of the production gain and diminished consumption is a gross apparent decrease of 554,248 barrels in the total number of barrels marketed.

The daily averages are, of course, the only proper basis upon which to figure. The daily average consumption for May was 276,325 barrels; for June, 267,061 barrels; decrease in June daily average, 9,264 barrels. The total surplus for the month was 98,100 barrels, or barely more than a third of a day's production. It is interesting to note at this point that the June consumption is likely to be greatly exceeded by that for July, since our records show that every month for which there is recorded a large consumption gain over the month preceding it, is followed by a temporarily reduced sales-total, and the month after a considerable gain is again noted. From this we deduce an increased consumption for July. It may also be noted here that the June surplus is equal to only about one-fifth of the oil drawn from stocks in May.

Standing of the Various Fields.

Amongst all the fields making a larger output, Mid-

way comes first with a gain of 5,555 barrels daily. The following fields also gain in daily average production, to the amount given: Coalinga, 1,542 barrels; Sunset, 677 barrels; Santa Maria, 630 barrels; McKittrick, 557 barrels; Fullerton, 244 barrels; Whittier-Coyote, 206 barrels; Salt Lake, 138 barrels; Lost Hills, 121 barrels; Santa Paula, 34 barrels; Puente, 15 barrels daily average increase. Kern River's daily output has declined 380 barrels from the May figures. Lompoc fell off 85 barrels, Santa Paula 19 barrels and Los Angeles 16 barrels from their daily output in May. Summerland shows a decrease of 1 barrel and Watsonville remains stationary. The Statewide average output per well per day for June is 45.08 barrels, as compared with 44.09 barrels for May. This represents a gain of nine-tenths of a barrel per well per day for the entire State.

Rigs, Wells Drilling, Etc.

There were 48 rigs completed in June, 3 less than in May. A decrease of 19 wells drilling brings that number to 373 at the end of June. Number of producers increased from 5924 to 5997, or 73, of which 64 were completed in June, the other 9 evidently being wells which had been temporarily closed down. Abandonments numbered 17, the largest number for some time past. It is significant that 9 of these were in Midway, where such good work is being done in plugging worthless wells, for the betterment of the entire field.

Following is our regular table giving all the usual details:

FIELD	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Daily Av. Prod. Ea. Field (To within 1-2 Bbl) May	June	Production for Month
Kern River	4	8	1,675	4		29,885	29,505	885,150
McKittrick	6	19	307	4		18,222	18,779	563,383
Midway	21	106	844	28	9	79,773	85,328	2,559,843
Sunset	3	33	267	8	2	15,677	16,354	490,620
Coalinga	2	60	898	7	1	52,666	54,118	1,623,551
Watsonville			5			75	75	2,250
Lompoc		3	28			3,345	3,260	97,800
Santa Maria		11	183	4		13,680	14,310	429,300
Summerland			122		4	171	170	5,100
Santa Paula	2	26	326	1	1	2,552	2,586	77,593
Newhall		1	73			315	296	8,896
Salt Lake	2	12	292	2		7,575	7,713	231,395
Los Angeles			400			1,057	1,041	31,240
Whittier-Coyote	2	18	146			4,463	4,666	139,966
Puente			54			65	80	2,400
Fullerton-Brea Canon	3	57	294	2		22,085	22,329	669,885
Lost Hills	3	17	73	4		9,598	9,719	291,569
Salinas Valley		2						
Repetto								
	48	373	5,997	64	17			8,109,941

Summary

	Barrels.
Stocks, May 31, 1913	46,367,329
Cor. due to residuum previously carried as stock of crude oil	75,770
Production, June, 1913	8,109,941
Consump., June, 1913	54,401,500
Stocks, June 30, 1913	8,011,831
Daily Ave. Production	270,331
Daily Ave. Consump.	267,061
Daily Ave. Surplus	3,270

Shells Increase Capital

The Shell Transport and Trading Company has voted to increase its capital from five to ten million pounds, or from \$25,000,000 to \$50,000,000. It is stated that a good part of this money will be used to get into a strong position in the California oilfields. The statement of Sir Marcus Samuel, Chairman of the Company, to the

shareholders, which is of utmost significance, follows:

"It is absolutely necessary, in the minds of your directors, that they should have shares available for issue in the event of further opportunities arising of acquiring desirable businesses." This statement followed a previous one regarding the acquisition of other companies.

Engineering and Technical

Diesel Engine Developments.

The Diesel-engined vessel continues to gain favor at the expense of the coal baron. There is no getting around it.

The largest ship thus far constructed using the Diesel type engine is no less than 400 feet long and has a displacement of 8,350 tons. This vessel, the "Hagen," is driven by an 850 horse-power Carels-Diesel engine, her speed being in excess of twelve miles per hour. The "Hagen" crossed the Atlantic in 17 days, 21 hours, on a fuel consumption of three and a half tons of oil per day, developing 800 horse-power at 97 revolutions. The "Hagen" is now in service in American waters, traveling from Port Arthur to Kingston and Toronto. She is the property of the Standard Oil Company, which means that she is a model of present-day efficiency, else she would not be in that service. Next in size to the "Hagen" among the recently built Diesel-engined vessels is the "Kurmark," a 7,500-ton ship, which will develop 2,700 brake horse-power from two single-acting, four-cylinder, two-stroke cycle Diesels. The "Kurmark" belongs to the Hamburg-American Line. She is built to carry freight; precisely at a time, too, when a campaign against Diesels is being engineered by the coal-owning elements. The Italian Navy is now using a Diesel-engined tow-boat, which is described as "remarkably easy to handle" as well as economical. There are a large number of Diesels being built at this time, if we may credit various sources of information which appear worthy of belief, and in no distant time we may expect to see them here on the Pacific Coast, since the opening of the Panama Canal is not very far off.

Dr. Leonard Keene Hirshberg, writing in the Paint, Oil & Drug Review, recently showed the economy that was obtained in the operation of a Diesel-engined vessel of 1,235 tons' capacity; this we consider so interesting that we quote it verbatim for the benefit of our readers:

"Mr. C. Zulver, an English engineer, after two years' experience with a vessel of 1,235 tons capacity which was equipped with a four-cycle, six-cylinder Diesel engine, finds that the fuel consumption did not exceed two tons of oil a day. This is certainly less than one-fifth of the coal consumption of a steamer of the same tons capacity. Moreover, the vessel was able to finish a voyage of three months without stopping at any intervening point for fuel; and there still remained six tons of liquid fuel on board at the end of the voyage.

This indicates that the steamer's whole consumption was in sixty-days steaming—sails were evidently used at the other time when stops were not made—134 tons of oil. The voyage was repeated several times with the same result as well as no evidence of wear and tear on the part of the Diesel engines. Altogether this ship has covered 45,600 miles, while the engines have made over twelve million revolutions.

"Furthermore, her cargo capacity, according to Mr.

Zulver, is some 15 per cent greater than coal-carrying steamers of equal dimensions. With the freight rates that now prevail, an oil-fuel steamer such as this one, can earn much more than similar size coal vessels; \$12,500 was saved in one year with this little ship, for there are no "banked fire" or other "stand by" losses. Repairs, maintenance and cooling boilers are all economic factors that must also be considered."

Geological Survey News Bulletin Says Petroleum Production in 1912 Greatest in History

The great production of petroleum in 1911, which was 220,449,391 bbls., was equaled and passed in 1912, when the total reached 222,538,604 bbls. Higher prices were the rule in 1912 except in California, and even in that state there was no material decline. The total value therefore increased markedly, reaching \$164,087,342, according to U. S. Geological Survey.

The greatest increase in quantity was in California, where the total advanced from 81,134,391 to 86,450,767 bbls., a gain of 5,316,376 bbls. Wyoming showed the remarkable gain from 186,695 bbls. to 1,572,306 bbls., owing to the increased activity of the Mid-West Oil Co., and the Wyoming Oil Fields Co. Operations in northern Texas also more than offset the usual decline in the Gulf region and resulted in a significant gain for that state.

The volume of crude oil and of all the usual products exported from the United States increased, owing to the fact that foreign conditions were much more favorable to American exporters. Meanwhile the importation of gasoline from the East Indies was a favorable element in relieving the growing demands for this product on the Pacific Coast.

The improved conditions in the export trade and the increased capacity of the refiners to take care of the great yield of crude oil resulted in a marked decline in stocks in all fields except California, and even there the storage of petroleum was checked by an increase in consumption.

The total stocks of all crude oils at the beginning of 1912 aggregated 138,000,000 bbls. By the close of the year they had declined to 125,000,000 bbls. The decline was greatest in the fields east of the Rocky mountains, where on Jan. 1, 1912, the stocks aggregated 94,000,000 bbls.; they were reduced during the year to 79,000,000 bbls.

This decline at once brought out a marked stimulation of prices all over the east, with a view to increasing the activity of drilling. Its effect was so marked that the natural decline of the older fields was checked. Even Ohio showed a slight increase in production in 1912, for the first time in 12 years. The value of the California output, according to the Survey, was \$39,213,588, making the average price per barrel \$0.454.

Meeting of International Engineering Congress, San Francisco, 1915.

One of the features of the Exposition to be held here in 1915 (if it's held on time), will be an International Engineering Congress; engineers from all over the world will be invited to attend and participate. Five national engineering societies have co-operated in the appointment of a Committee of Management, the same consisting of the presidents and secretaries of each of the societies and of eighteen members resident in San Francisco. The five societies are: American Society of Civil Engineers, American Institute of Mining Engineers, American Society of Mechanical Engineers, American Institute of Electrical Engineers, and Society of Naval Architects and Marine Engineers. It is said that papers invaluable to engineers throughout the world will be read and that all the proceedings will be reported and published at a cost sufficiently low to make it available to the largest possible number of those interested.

One very interesting feature of the Exposition will be the oil engine display. The progress of the oil engine from its inception to date will be shown, according to reports here in San Francisco. The auto display will outclass anything undertaken in this direction to date. Machinery Hall, which is fast nearing completion, is an immense structure and will accommodate a tremendous machinery display. Further data will be published on this subject in later issues.

The Third General Meeting of the International Petroleum Commission

A general meeting of the International Petroleum Commission is to be held in Bucharast, Roumania, from the 12th to the 20th of October of this year, under the auspices of the Roumanian Government. A preliminary meeting of three days duration was held by the German Section of the International, in Berlin, taking place June 19, 20 and 21, its purpose being to prepare for the Bucharast Journal.

Through the courtesy of the Commission's Secretary, Professor Ubbelohde, the Derrick has been invited to send a representative to the meeting in Bucharast. The Derrick will not be able to send any representative, but is nevertheless able to give a sort of summary of the details of this meeting, which is the third general meeting of the Commission. Accompanying the invitation to attend the meeting was a circular in which was given information regarding the organization of the meeting, stating the countries represented, notifying the special committees appointed at the second meeting held at Vienna two years ago to be ready to report and giving the details of what is to be considered by the various sub-committees, in the different sections; namely, illuminating oils, benzene, lubricants, crude petroleum, heavy oils for gas manufacture, the derivatives such as paraffine, vaseline, asphaltum; also, too, the international definition of various oil products, such as benzene, illuminating oils, paraffin, gasoline, etc. also to consider the question of storage and transportation of petroleum and its products; also to continue the discussions of petroleum and its products that were taken up at the second international meeting at Vienna. The Commission members are also to discuss the construction and use of new laboratory apparatus and equipment of refineries; also question of taxation, duty and freight rates; notices in regard to publica-

tions of general meetings under the sub-sections of the committees. Announcement is made of the formation of a new section in Switzerland, with the names of its officers and members of the Commission. The circular also announces the death of one of the members of the Commission, Professor Riebe, a member of the German Section.

Other details regarding the Commission's meeting will be published at a later date.

The Derrick thanks Professor Edmond O'Neill, Dean of the Chemistry College of the University of California, for his courtesy in translating for us the Commission's circular and invitation.

May Tax Kerosene.

It is said that kerosene is taxable in England under the definition of "motor spirit," "providing it comes into general use and gives evidence of providing reasonably efficient fuel." So, unless "kerosene" is given a new name and is sold to motorists purely as lamp oil, which they may burn as they please after they buy it, it probably will be taxed, because there is no doubt in the world that kerosene is the coming motor-vehicle propelling oil. What troubles they have in England!

Technical Notes

Dr. J. A. Holmes, Director of the Bureau of Mines, will shortly make a visit to the Midway oil field, for the purpose of better acquainting himself with field conditions. Preparations are under way for his welcome and attention while he is there.

The State Railroad Commission is sending out blanks to the different oil companies to secure data for use in applying the new common carrier pipe line law. The queries relate to location, ownership, points of commencement and distribution and other matters to aid the Commission in carrying out the law. There is no appearance of a disposition on the part of any corporation to attempt to "get around" the new measure.

Standard Oil Company is beginning to get interested in "casing head" gasoline. It is said the Standard will shortly make use of its available gas for compression and that it will create a new product suitable for aeroplanes, by blending the compressed "gas" with a lower gravity product. The new gasoline will be suitable to other use as well.

"Heavy oil as fuel for internal combustion engines" is the title of an exhaustive treatise by Mr. Irving C. Allen of the U. S. Bureau of Mines, a technical paper of the utmost value and timeliness. The Derrick will discuss this paper in the next issue.

The Petroleum Gas Reduction Company, 330 Grosse Building, Los Angeles, owners and patentees of a refrigerating process of extracting gasoline from gas, announces the completion of the plant of the Olinda Gasoline Company, on the property of the Petroleum Development Company, at Olinda. The new plant, the first of its kind to be constructed, will handle 700,000 cubic feet of gas per day and will extract from this approximately 2,500 gallons of gasoline. The Derrick expects, in an early issue, to publish a full description of the new plant and the process whereby the gasoline is extracted.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

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The ***
*Derrick's
* *Creed

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

Pacific Coast As Great Naval Base.

All the newspapers are publishing dispatches from the South quoting Secretary of the Navy Josephus Daniels as greatly in favor of making San Pedro the leading naval station of the Pacific Coast. The Secretary is said to have been very enthused over the oil supply here, and its availability. The newspapers are entirely too interested in making an immense story of the Secretary's visit for us to take seriously all they say, but the main facts appear to be that the Secretary is aware of the value of fuel to the American Navy—which God knows it is time SOME Secretary should be aware of—and that the navy will construct all oil-burning battleships from now on. Are we glad to hear this? ARE WE? Well, we wonder! It has been the belief of the Derrick that this would come to pass, the ardent hope and a matter which we have endeavored to keep thrusting before our readers as often as possible. On the strength of the New Navy, Here's flow! And many of them!

* * * *

If the marketers thought they could store more oil at a profit wouldn't they build greater storage and buy more at present prices?

* * * *

In 1912 there were 333,213 tons of oil asphalt refined, this being a one-third gain over 1911. The return from this at the point of production (the various plants) was \$3,534,077, or more than \$10 per barrel. The Geological Survey states that the "asphalt trade within a few years has been dominated to a steadily increasing extent" by the liquid product—which, incidentally, the "Derrick" has claimed would be the case for at least four years past, "on and off."

* * * *

"General financial conditions" is a phrase not quite to the liking of a great many shareholders just at present. It covers a multitude of troubles.

* * * *

"Albert Schoonover" is a name that oil operators on government lands in the Midway-Sunset fields will have

occasion to notice. Mr. Schoonover, a San Diego attorney has just been appointed Federal District Attorney for the Southern District of California, succeeding A. I. McCormick. He will take up the cases in his new office where the former District Attorney left off.

* * * *

Gasoline here is selling to the consumer for 17 to 20 cents per gallon. In England, 45 cents, and lucky to get it at that. No wonder they're anxious over there for some "oil fields at the Empire!"

* * * *

Two very pleasant items have recently come to our attention: One, news of Kansas and Oklahoma oil selling at 98 cents per barrel; the other, that the Birch Oil Co.'s well in Brea Canyon, originally known as the Menges, was assessed at \$1,000,000—which shows that here is one wonderfully profitable well; the most profitable, in our belief, ever drilled in California.

* * * *

We imagine the power of the oil publications of California is by no means limited; at any rate the power of their criticism is not greatly limited, since it is apparent that this and this alone was the cause of the revision of Robert Anderson's estimate of 250,000,000 barrels of oil in Elk Hills to an estimated 150,000,000 barrels, or three-fifths smaller, content. And, following this revised estimate, the selection of Naval Petroleum Reserve No. 2. Truly, criticism can accomplish wonders!

President Lyman Stewart's Letter to Union Oil Stockholders

President Lyman Stewart's letter to shareholders of the Union Oil Company, announcing the discontinuance of monthly dividends and semi-annual payments, caused many of the smaller holders to sell out at as low as \$58.50 per share. Yet a careful perusal of the letter shows every reason (except monthly dividend payments) for holding on, if a monthly payment is not absolutely essential. The drop to \$58.50 makes a decline of 42 per cent inside a year. The first decline came when Union was optioned to General Petroleum. Union's properties are vast and probably worth \$150,000,000, on a conservative estimate. The drop in stock price is therefore incomprehensible except as an indication of stock exchange panic. Following is President Stewart's letter:

"Los Angeles, Cal., July 18, 1913.

"To the Stockholders of the Union Oil Company of California:

"Herewith we transmit check for your dividend No. 204, which brings the total amount of cash dividends paid to date to \$13,451,806.55.

"Henceforth dividend announcements will be made semi-annually, January and July. It has been evident to your Directors for a long time that the payment of dividends monthly is not only needlessly cumbersome and expensive to handle in a large company, but as well that it places a fixed load upon the Company, regardless of commercial and financial conditions, and therefore frequently concurrent with other obligations. This action does not affect the action of the Producer's Transportation Company and Newlove Oil Company, which are payable quarterly.

"In the nature of this Company's business and the distribution of its funded and floating obligations, January and July have been demonstrated to be those months in which dividend distributions can be made to the best advantage.

"Zerolene" is Vouched for by the Standard Oil Company.

"Discount rates in the money markets of the entire country, and of Europe as well, have been gradually growing higher since last fall, and while there have been brief periods of easier conditions, it is apparent that money, whether for current or fixed purposes, will not be available at ordinary rates of interest for some time to come.

"Your management, therefore, feels it a duty to the stockholders as well as to the community, to avoid, as far as possible, the borrowing of funds at prevailing rates, and an equal duty to conserve and increase the liquid resources of the Company to safeguard against contingencies. The Company is today in better physical condition than it has ever been. Its various departments having in charge the operation of producing, transporting, manufacturing and selling its merchandise, are all working harmoniously and with commendable efficiency.

"The growth in the Company's volume of business for the past four years has taxed all facilities to the utmost. In spite of general prevailing conditions in so many lines of trade, this Company's sales and collections continue to increase. The gross sales for the first six months of this year contrasts with the same period in former years as follows: 1910, \$4,945,985.79; 1911, 7,379,291.61; 1912, \$7,768,902.11; 1913, \$9,700,752.60.

"Collections keep close pace with sales and show but slight variation from month to month in percentages.

"This manifestly satisfactory condition is true not merely of one or two of the Company's various distributing stations, but of all of them. Production and sale of both crude, refined and manufacturing products are growing in proper ratio.

"Drilling operations are steadily being continued. A new well has been completed since the first of the month on the Newlove property which is now producing at the rate of 1000 barrels per day of high gravity oil. Other wells are approaching completion with every indication of substantially increasing the Company's production.

"New contracts for the sale of oil are constantly being made at satisfactory prices. It is interesting to mention in this connection, that the Company has recently made delivery of a large quantity of fuel oil to one of the first class steamship companies engaged in trans-ocean passenger business. The Union Oil Company of California is therefore the pioneer in introducing fuel oil into an English built ship for this class of passenger service.

"Respectfully submitted,

"LYMAN STEWART, President."

Col. Tim Spellacy's New "Job."

Col. Timothy Spellacy has been appointed by Franklin K. Lane, Secretary of the Interior, as special commissioner or agent (we don't know the exact title Col. Tim's job carries with it) to take testimony bearing on the leasing of the oil and gas rights on the Osage Indian Reservation, on a one-tenth royalty. A very careful investigation will be made and reported on. The time of Col. Spellacy's return to California is not known to us. The Colonel's "job" is a big one, carrying immense responsibility and necessitating the appointment of a genuine oil man, such as the Colonel, to deliver the goods satisfactorily.

UNION PETROLEUM COMPANY

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Pithy Paragraphs

Big Earnings of Mohawk's Well

Mohawk Oil Company well No. 1 made for the company in the year May 31, 1912, to do 1913, \$275,000.

Completes Line to Mojave

The General Pipe Line Company has completed its line to Mojave, from Lebec pumping station, a distance of 53 miles, and is now delivering oil to the Santa Fe Railway under the terms of its contract, which, if we recall correctly, calls for 9,000,000 barrels during the next three years. The new line saves the Santa Fe the Tehachapi haul and makes possible its use of the tank cars devoted until the present to caring for its own needs. Incidentally it serves the public in that it does away with just that much freight over the Tehachapi pass, the only railroad entrance from the Great Valley to Los Angeles.

Immediately following the discontinuance of negotiations on the part of an English Syndicate to purchase the United Oil Co., The N. A. Oil Consolidated and the Section Two Oil Co.'s, the United levied a 5-cent per share assessment. Shares issued \$2,000,000. "Financial conditions" responsible, in spite of the fact that the Company earned \$169,000 last fiscal year. Payment becomes delinquent August 18. Company owes \$290,000, of which sum \$200,000 is mortgage notes that will mature September 15, 1914.

Miocene Oil Co., Midway, production is holding up splendidly. Well No. 1, which came in eighteen months ago, is making 275 barrels per day and No. 2 is doing 1000 barrels per day; oil from both wells is 21 1-2 gravity. Sold to Agency. No. 2 was brought in about three months ago. The Pollacks, Mills Bldgs., San Francisco, manage the property.

Three new tankers of 10,000 tons capacity each will soon be in operation on the Pacific Coast in the service of the Union Oil Co., between California and South American and British ports. The vessels, which are up-to-date in every particular, are now under construction in a British shipyard. The addition of the three new vessels will give the Union Oil Co. eighteen vessels.

Petrol Oil Co., Santa Susana, Ventura County, is receiving record price for its oil, which is very high in lubricating value. Price paid for a recent carload shipment to Los Angeles, was \$2.10 per barrel; the highest priced oil in the State.

The North American Oil Consolidated, has just acquired control of the Section Two Syndicate's property of 640 acres. A big deal. Consideration unknown. Clarence Berry and J. F. Carlson are the largest owners of Section 2 Syndicate and Louis Titus and L. E. Doane of the North American. The latter company is expanding steadily.

The American Gasoline Company will shortly receive at their Seattle station 2,000,000 gallons of Sumatra benzine, which is on its way here on board the ship "Cowrie." Another shipment to San Francisco will follow the one mentioned.

It is quite generally reported that Mr. "Ben" White, a Los Angeles real estate dealer, has got a commercial oil well in a wild-cat hole in Temescal Canyon, Riverside County—near Corona. The depth from which the oil is thought to come is somewhere between 1200 and 1500 feet. Gravity is stated as about 18 degrees. Present depth of the well is 2500 feet. Same will be carried down for a deep sand. If no good stratum is reached, says report, the sand already tapped will be tested. Further details later.

The Midway Southern Oil Company's lease will be sold at a sheriff's sale to satisfy a debt of something over \$5000, due the Zierath Combination Drill Co. All is not joy, in the oil business.

General Petroleum is making a test of its gas output in the Lost Hills to see whether or not it will be profitable to enter the gasoline from gas business. If so, there'll be that much more gasoline on the market.

Press dispatches state that the Belridge Oil Company is installing a large Bessemer Gas Compressor to test out their gas, and that if the gasoline content is sufficient to warrant compression they will install a large plant and "get into the game." (Everybody's doing it that can.)

E. A. Clappitt has purchased from the Denver and Michigan Oil Companies their two 20-acre leases in section 4, 29-28, Kern River, at a price not made public, but believed to be on a valuation of about \$2000 an acre.

Lost Hills Property Divided.

Messrs. Martin and Dudley, discoverers of Lost Hills, who owned a one-fourth interest in the Associated Oil Company's land in the Lost Hills, which property was purchased two years ago for \$1,200,000, are reported to have recently received the deeds giving them full title to their proportion of the property. Our informant states that Martin and Dudley have divided their interest, D. B. and E. R. Dudley receiving 56 per cent and J. D. Martin 44 per cent of the property. The value of this land has climbed steadily until some of it is now reckoned to be worth \$2,000 an acre. The total acreage which has been divided was 28,740, Martin and Dudley receiving 7,185 acres as their share of this bonanza land. Within the past few weeks no less than seven big gushers have been brought in, making oil of from 30 to 37 degrees gravity. Lost Hills is now considered unquestionably the greatest light oil field in California.

Interesting Developments of Recent Date

Light Oil Men's Meeting Postponed

The light gravity oil producers meeting which was scheduled to take place on Friday the 25th of July, in the red room of the St. Francis Hotel, this city, was attended by only eighteen persons, aside from five reporters. Among those present were the Pausons of the W. K. and Turner oil companies, the leaders of the movement; H. H. Welsh of Fresno, the Agency member "Al" (S. A.) Guiberson, Jr., I Strassberger, Robt. Hayes Smith, James Cameron and others interested. The chairman of the meeting, Mr. Jos. Seeley, stated that as the attendance was so small he did not think it advisable to proceed; that L. P. St. Clair, president of the agency, had telegraphed his inability to attend, and that others had written asking the postponement of the meeting so they might attend. He proposed that some one of those in attendance make a motion adjourning the meeting, which was done without further ado. The lack of interest displayed was considered "quite a frost" by the reporters and most of the members expressed disappointment at the outcome. The reporter for one of our contemporaries was of the opinion that "there was a Senegambian in the cordwood (to put it politely), since these independent light oil men never could seem to get together." Another meeting will be held; at call of chairman.

Standard Gets Immense Well in Midway

On July 26 the Standard Oil Company's well No. 10 located on 36, 31-23, Buena Vista Hills, came in with a flow of more than 12,000 barrels per day, the gravity of the oil being 26 degrees, Baume. A big well had been expected and prepared for with the usual Standard thoroughness, but in spite of that fact, after the well had been capped and was apparently under control, making more than 500 barrels per for the two days succeeding its in-coming, the gas pressure broke the fittings and the oil was soon running down the gulch and into a large sump which, providentially, the K. T. & O. Co. had constructed last November to keep the oil from its big well on Section 1 from running into Buena Vista lake. Had this sump not been there, the oil would surely have kept on its way until it reached the waters of the lake, or so state those who saw the performance. The gravity of the oil makes it particularly nice for the Standard, whose officials are tickled as can be over their splendid success in bringing in big ones this past month, of which the Emery ranch well in the South is the next largest to the big Midway gusher.

Monte Cristo Doubles Capital

The Monte Cristo Oil and Development Company has voted to increase its capital stock from \$500,000 to \$1,000,000, shares having a par value of \$1,000 each. The stock will be marketed and the funds will be devoted to the development of the promising new territory recently acquired by the Company. The Company up to this time, has paid \$1,427,500 dividends on its \$500,000 capital. Henry Ach, the famous attorney of this city, is the President and the brains of the Monte Cristo.

S. M. Oilfields, Ltd., Acquires Properties

The above Company has recently acquired three leases on property in Cat Canyon, aggregating 1,320 acres, on which there is one well; and also the entire Laguna Rancho, consisting of 12,000 acres not far from Los Olivas. The latter tract is looked upon as being excellent prospective territory, being crossed by the so-called Pinal Anticline.

Western Pacific May Traverse Oil Fields

The Midway Driller, Oil World and other oil publications state that the Western Pacific may run a "line parallel to the east side line of the Southern Pacific through the San Joaquin Valley in order to share in the haulage. By tapping the oilfields it will compete with the Sunset Railway, which has the record of making the highest earnings of any railroad in the country." All statements are quoted as emanating from Mr. Benj. F. Bush, the new president of the Western Pacific.

Another Rumor

There is a "sensational rumor" going the rounds in Los Angeles to the effect that the General Petroleum Company is about to become a member of the Independent Agency. We have no verification of this. The rumor is certainly of importance if true.

Settlement of Famous Ouster Suit

The ouster suit of the State of Texas against the Magnolia and Corsicana Petroleum companies of Texas, the Standard Oil Companies of New York and New Jersey, and 28 individual defendants, (among them J. D. Rockefeller, J. D. Archbold and other big Standard chiefs), has been settled by the payment of half a million dollars and by the transfer of 21,596 shares out of 24,500 shares of stock of the Magnolia from the individual control of H. C. Folger and John D. Archbold to a trustee mutually satisfactory to the State's attorneys and the latter gentlemen. The Magnolia is allowed by the verdict to continue its business as divorced from the control of Messrs. Folger and Archbold, and is vindicated of violation of the anti-trust laws of the State of Texas. The Corsicana Company is also adjudged not guilty of the charges against it. The payment of the penalty is for violations of the antitrust laws prior to 1909. Total penalties aggregating \$102,000,000 were asked; settlement for \$500,000 lends belief to the contention of defendants that the State's case was not a strong one to begin with, since the settlement actually made is on the basis of less than one-two-hundredth of the penalties asked. It is charged that the Pierce interests were active in bringing about the suit against the Magnolia, in an effort to punish the latter company for old differences.

New Oil Publication

The Petroleum Reporter, a new oil journalistic venture, is making its appearance weekly in Taft, which field appears to be the Reporter's especial effort to benefit in addition to reporting conditions in other fields. The reporter is fathered by the Petroleum Club of Taft. It is a very creditable 8-page paper.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

The Great Flood

The biggest event in the Coalinga field for a long time past was the flood that has just visited us as the result of a elondburst. Nothing like it has ever happened here before. The Southern Pacific track up Warthan Creek is washed out in several places around the substantial culverts put in last year. Wagon roads are washed out. Operations on many properties were suspended for a number of hours while the water drained off. The Berkeley Coalinga Oil Company suffered the loss of a galvanized iron tank, the same being washed down a gulsh and demolished beyond any hope of repair. The Lubricating Oil Company's casing rack was carried away by the rush of water and the casing rolled "whither it listed"—mostly in the ditch. Damage was done to the Associated on section 36, 20-14; to the American Petroleum, section 30, 20-15; to other properties in the storm section, which centered around section 2, 21-15, 12, 21-14 and 35 and 36, 20-14. Very little rain fell at the California Oilfields Ltd., or at the water plant on section 16, 20-15.

Turner Oil Co.

The rig for well No. 7, on 2, 20-15, has been completed and the well will be spudded in immediately. Wells 5 and 6 are still making a great output, as mentioned in another paragraph. An interesting feature connected with the output No. 5 is noted the increased flow of the old Mohawk well No. 1, about 300 feet distant. When No. 5 was choked down from a 6 1-4 inch pipe to a 3-4 inch pipe, the Mohawk began to "whoop-her-up" to the tune of 900 barrels per day. This well was a big gusher in 1910, coming in at 4000 barrels; output recently is reported to have been about 500 barrels.

Marion Oil Co.

No. 1, on 6, 21-15, is now on the beam and making a good showing; 200 barrels per day and very little sand. Result of re-drilling. The oil is coming from the first sand stratum, which is about 36 feet thick. A second and lighter sand lies about 1000 feet below the one from which the present production is coming. Another well will be drilled to this sand immediately.

Spokane-Parkfield Oil Co.

Well no. 2 of the Spokane-Parkfield Oil Co., located on section 13, 23-14, on the Thompson property, Parkfield District, Monterey County, is being pumped at a depth of 245 feet, testing the first sand. This is the first well to be regularly pumping oil in this field. Well

No. 5 is 500 feet deep and will be pumping August 10, if all goes well. A 300-barrel iron storage tank has been installed to hold the oil. Gravity is said to run from 15 to 23 degrees, Baume. The property looks good to the Company.

New Heating Stations for Associated Pipe Line

The Associated Pipe Line Co. is installing a heating station on 35, 18-15, similar to Station No. 1, on section 17, 20-15. The name of the new station will be "Mack Heating Station."

Imperial to Resume

There is a report current in Coalinga that the Imperial Oil Company will resume operations discontinued several years ago on their property on section 2, 19-15, following the visit to the field of Messrs. A. Mack of San Francisco and W. S. Boggs of Bakersfield, who looked over the East Side field, visiting the Turner wells and inspecting the Kern Trading and Oil Co.'s operation on 11, 19-15.

Oilfields Ltd.'s Big Reservoir and Drilling Activity

California Oilfields, Ltd., is constructing a 750,000 barrel concrete oil storage reservoir on section 36, 19-15. Lumber is being hauled to the site of the reservoir, the same to be used for forms in which to set the concrete, for roofing over the reservoir and for necessary buildings. It will require 600,000 feet of lumber. The company is running three strings of tools on section 14, 19-15, four strings on section 26, three strings on section 27 and five strings on section 34, all on T. 19 S., R. 15 E., and all on new work. There are about five strings of tools run on old work, cleaning out and re-drilling, in all twenty strings of tools are running on the company's property in this field. Material is on the ground for about ten new rigs, the company's rig builder will at once commence the erection of the rigs; a large number will go to section 34, 19-15.

K. T. & O. Co.'s Operations

The Kern Trading and Oil Company have about used up the annual appropriation for the oil fields, consequently some work in this field has been temporarily suspended. The producing wells are receiving full attention. The east side field is receiving the greatest attention; the deep territory is producing big wells and high gravity oil. The requirements of the Southern Pacific for its ever increasing mileage of road will require an additional appropriation for the coming fiscal year; at least 15 strings of tools will be needed for this field alone to meet the demands of the railroad com-

(Continued on Page 14)

THE STOCK MARKET

Market conditions continue quiet, but with sporadic activity. The phenomenal drop in Union Oil from around \$80, where it was selling last month, to as low as \$58.50, where it has sold this past week, has apparently affected the market all around. It will be recalled that Associated "hit the toboggan" some time back, getting under \$40, where it has since remained, the last sales being at \$39.50. Union Provident and United Petroleum, holding Companies of Union Oil, have both been below \$70, but latest quotations show \$75 asked for Union Provident. Amalgamated remains very strong in the face of the general slump, the recent extra dividends no doubt causing this. Storage certificates are selling at 29; Premier Oil's stock sold at a new low record—15 cents; a sad drop from the \$1.10 prices of two years back.

In the South, Maricopa Northern sells at 45 $\frac{1}{8}$ cents. United Oil at 3 cents, California Midway at 11 $\frac{1}{2}$ cents, National Pacific at 2 $\frac{3}{8}$ cents, Midway Northern at 25 cents, all very low prices.

On General Petroleum \$16 is bid here. Standard Oil is very strong on the New York Curb at \$177-179. This about covers sales of all important stocks; quotations on stocks listed on the San Francisco and Los Angeles exchanges follow:

San Francisco Quotations

COMPANY	BID	ASKED
Associated Oil Stock	\$ 37 50	\$
California Midway	20	
Caribou	1 00	
Claremont	55	60
Coalinga Central	20	
Coalinga Mohawk	60	
Illinois Crude		05
Maricopa 36	26	
Midway Premier	08	
Monte Cristo	65	70
National Pacific	02	
Occidental	25	
Pacific Crude Oil		30
Premier	15	20
Record	1 00	
Republic	05	
Sauer Dough		1 50
Sovereign	08	
S. W. & B.	10	
Sterling	75	
Turner	1 40	

Los Angeles Quotations

COMPANY	BID	ASKED
Amalgamated Oil	\$ 82 00	\$ 86 00
Associated Oil	39 37 $\frac{1}{2}$	40 25
Bear Creek Oil & M. Co.	60	
Brookshire Oil		65
Calif. Didway Oil Co.	10	
Central	66	
Columbia		84
Continental Oil		25
Euclid Oil Co.		20
Fullerton Oil	1 50	3 00

Globe		03
Jade Oil Co.	03	05 $\frac{1}{2}$
Maricopa Northern	04	04 $\frac{3}{4}$
Maricopa Queen Oil Co.		50
Mascot Oil Co.		60
Mexican Pet. Ltd. "com"	58 50	
Midway Northern	26 $\frac{3}{4}$	
National Pacific Oil Co.	02	02 $\frac{1}{4}$
Olinda Land Co. (Oil)	30	33
Penn. Midway Oil Co.		10
Rice Ranch Oil Co.	62 $\frac{1}{8}$	1 07 $\frac{1}{2}$
The Petrol Co.		3 00
Trader's Oil Co.	38 50	42 50
Union	59 50	59 75
Union Provident Co.	72 50	75 00
United Petroleum	72 25	76 00
United Oil Co.	03 $\frac{1}{4}$	
West Coast Oil Pfd	96 00	104 00
Western Union		85 00
White Star Oil Co.	10	12

Dividends in June

June dividends totalled \$1,644,415.57, as follows:

Amalgamated	\$ 62,500.00
Am. Pet. pfd.	8,225.50
Am. Pet. com.	17,099.87
Maricopa Queen	4,960.48
Claremont	4,500.00
Dome-Pinal	4,000.00
Home (Coalinga)	10,000.00
Mt. Diablo	7,500.00
Record	10,000.00
Rice Ranch	3,000.00
S. F. & McKittrick	5,000.00
Sauer Dough	2,992.50
Section 25	20,000.00
Standard Oil of Calif.	1,125,000.00
State Consol	5,000.00
Union	184,753.60
Union Prov.	91,403.00
United Pet.	48,450.60
West Coast pfd.	15,000.00
Western Union	5,000.00
W. K.	10,000.00

Total Cal. companies\$1,644,415.57

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COALINGA—By Guy H. Salisbury

(Continued from Page 12)

pany upon their oil company. The coming year will show increased activity of the company in every field. From the present view point it appears that the Southern Pacific will prepare large storage to meet any set back by law or nature in its development that may come up in the very near future. The Company lost a rig by fire on section 21, 20-15, about the middle of the month.

Coalinga Notes

Turner Oil is utilizing the gas of the big No. 6 well. A gas trap 3 1-2 feet in diameter and 12 feet high has been installed on the derrick floor, with a 6 1-4 inch main leading away to the boilers of the Turner and W. K., of which there are 20, all of them being fired by the gas from No. 6; this utilizes, it is said, but one-fourth the gas output. All the buildings on the two properties are supplied with gas for cooking and illumination. The saving effected by the use of gas under the 20 boilers is \$150 per day. No. 6 is a money maker in the highest sense of the term.

Warthan Oil Co., N. W. quarter of section 4, 21-13, has resumed operations after three years shut down. Los Angeles capital has become interested.

Claremont Oil Co., section 24, 20-14, is building a new rig.

Standard Oil's Santa gNo. 5, section 36, 19-15, is down 1150 feet; depth to the oil desired is estimated to be 4200 feet.

S. W. & B. Oil Co., section 6, 20-15, has completed one new rig and has on the ground material for two more new rigs. Report is that two new strings of tools will be run on the property in immediate future.

Golden Crest Oil Co., section 12, 22-15, has abandoned its hole. Casing pulled out. Cause: insufficient finances and lack of encouraging showings in well.

Canadian Coalinga, section 8, 21-15, is making about 100 barrels per day, 28.9 gravity oil. The well is to be cleaned out to increase output.

The 116 acre property of the Coalinga-Consolidated, the Burr Bros. old-time venture, has been taken over by the Consolidated Light Oil Co., organized by M. C. Hunter of Spokane, who will clean out and finish well No. 1, the idea being to test the sand alleged to have been found at 1,400 feet and not tested by the former managers. The mismanagement of this well and of the old Coalinga Consolidated Co. by Burr Bros., caused a tremendous loss to shareholders, a suspicion that all oil companies were crooked, and, as a side issue was instrumental in the wreck of the California Consolidated Oil Co., of which the late Admiral Evans was president, when the similarity of the names mistakenly caused the Postmaster General of the United States to state that the Admiral's Company was a gigantic fake. The Admiral's company was a "gone gozling" from that date.

Turner Oil Company's wells No. 5 and 6, are making a combined output of 2900 barrels per day.

Future Success Oil Co., section 18, 23-15, Parkfield, is down about 900 feet.

Ward Oil Co., 12, 20-14, has completed re-drilling of well No. 7; result, 100 barrels per day. Operation of other wells temporarily suspended.

Pluto Oil Co. is down 3400 feet. Fishing job completed. Drilling in charge of "Jim" Walp.

Premier Oil Co., section 24, 20-14, are building a new rig. Report has it that a new string will be started soon. Production is holding up.

Maine State, section 31, 19-15, suffers loss of cook-house, office and bunk house by fire. No fatalities.

The Potters, section 35, 20-14, are now drilling No. 4. This is in the shallow territory; 550 feet to light oil.

Discover Big Light Oil Sand in Sunset Field

What appears to be without question the greatest discovery of the year in California is the new rich, deep oil sand in the Sunset field, pioneered by the National Pacific Oil Company in the well No. 2, located on fractional section 30, 12-23. The oil, which is 27 degrees in gravity and of a green tint, comes from a depth of 2915 feet, 400 feet below the first producing sand reached by the well. What the well will produce is not yet known, or at any rate has not leaked out, but A. J. Pollack told the Derrick's representative that there was no question about the sand being a genuine discovery; one not allied with any other sand yet found in this district, and probably extending over or rather under, a considerable area. It enriches the Sunset field considerably and is, of course, of tremendous value to the Company making the discovery. However: The Sunset field is considerably spotted; it may be that the well has run into a pool and not a sand of as great area as some think.

Standard's Big Bonanza Lease

Standard Oil's No. 3 Emery well, on the Emery Ranch, Coyote Hills, came in the middle of the month, producing 2500 barrels per day. No. 2 is making 1100 barrels daily and No. 1 is doing 900. Nos. 1 and 3 produce 25 gravity and No. 2, 28 degree gravity oil. This is said to be the best lease the Standard has in any of its lately acquired properties south of Tehachapi.

Henderson Union Oil Company, Wheeler Canyon, Ventura County, is reported to have finally shut off the water at 2800 feet, in well No. 4; a strong gas pressure gives the Company hopes of better than a pumper.

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The Necessity For and
CONSTITUTIONALITY
of the
Common Carrier Pipe Line Laws
of California.

By FRANCIS J. HENEY

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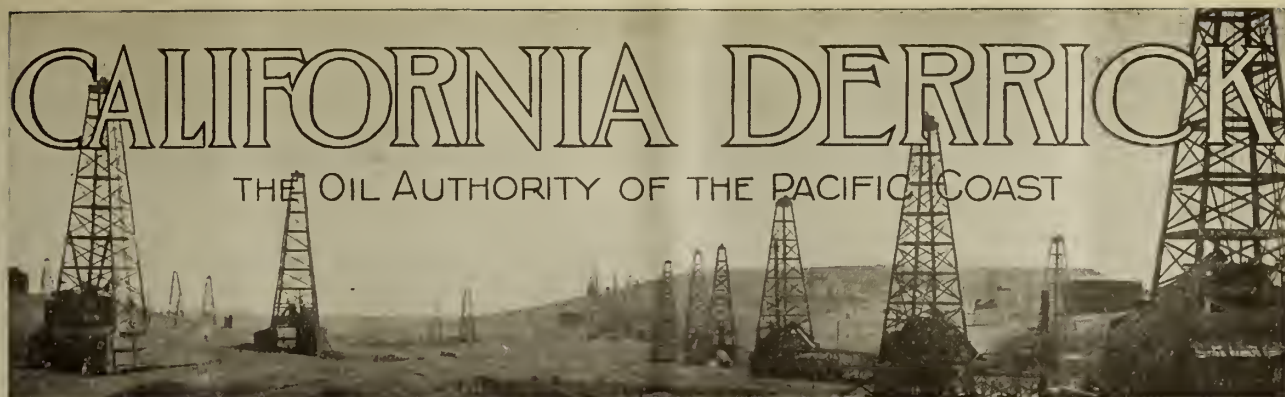
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Vol. 6

SAN FRANCISCO, CAL., AUGUST, 1913.

(Issued September 8)

No 1

The Necessity for and Constitutionality of the Common Carrier Pipe Line Laws

By Francis J. Hency,
Attorney for the "Oil Producers' and Consumers'
League."

Unregulated Pipe Line Control Tends to Create Monopoly

At the recent session of the Legislature, three laws were enacted which have for their purpose the prevention of the monopolization of the oil industry in California. In 1907 the Interstate Commerce Commission, after a thorough investigation of the oil industry in the United States, made a report in which, among other things, it said:

"More than anything else, the pipe line has contributed to the monopoly of the Standard Oil Company and the supremacy of that Company must continue until its rivals enjoy the same facilities of transportation by this means."

In another place in the same report the Interstate Commerce Commission says:

"At the basis of the monopoly of the Standard Oil Company in the production and distribution of petroleum products rests the pipe line."

Situation in California

Any man who has studied the oil situation in California must inevitably have reached the conclusion that the pipe line is the basis for the monopoly of the oil industry of this State. One fact, standing alone, emphasizes this proposition, to-wit: The only purchasers of oil in the oil fields of California are the owners of the only pipe line systems which operate from the oil fields of Middle California, Central California or the San Joaquin Valley to the San Francisco Bay, the Pacific Ocean and Los Angeles. The only pipe lines operating are:

Number and Ownership of California Pipe Lines

First: Two to San Francisco Bay which are owned by the Associated Oil Company, one of which is constructed for its entire length of 280 miles upon the right of way of the Southern Pacific Railroad Company, and the other of which is constructed for a dis-

tance of 148 miles upon the right of way of the Southern Pacific Railroad Company.

Second: Two lines owned by the Standard Oil Company which operate between the oil fields and San Francisco Bay.

Third: One line owned by the General Petroleum Company which operates from the oil fields to Los Angeles.

Fourth: One line owned by the Producers' Transportation Company which operates from the oil fields to Port Harford.

Fifth: One line owned by the Associated Oil Company and which operates from the oil fields to Monterey Bay.

Community of Interest Among Pipe Line Companies

It is a fact well known to all producers of oil that the owners of these pipe lines are the only purchasers of oil in the fields of Middle California, and that there has always been a community of interest among the pipe line owners which has resulted in an entire absence of competition among them for the purchase of oil, and apparently in an agreed price at the fields. The price being paid, as we shall presently see, is not sufficient to save the independent producers from ultimate bankruptcy.

Legal Theories of the Pipe Line Bills

The legal theories of the recently enacted pipe line bill by the California Legislature for the purpose of making common carriers out of the pipe lines proceed upon three distinct theories.

Right of Regulation Because of Threatened Monopoly

The first law proceeds upon the doctrine announced in the case of *Munn vs. Illinois* by the Supreme Court of the United States, in which it is said that whenever any private business grows to such magnitude and is of such a nature as to make it of great public consequence on account of its effect upon the general welfare of the people, it is competent for the Legislature to regulate and control such business in the interest

of the people, and that this is particularly true whenever the business is of such a nature that it has a tendency towards monopoly. It was upon this doctrine and theory that Congress in 1906 amended the Interstate Commerce Law by declaring that all oil pipe lines operated from one State into one or more other States are, and shall be common carriers and subject to regulation and control by the Interstate Commerce Commission. That amendment is now before the Supreme Court of the United States and, in my opinion, that Court will sustain it as constitutional.

Power of State Legislatures to Regulate

The second bill of the California Legislature proceeds upon the theory of the Sherman Anti-trust Law, as to the constitutionality of which no question has ever been raised at any time. The right of Congress to pass laws prohibiting combinations in restraint of trade or having a tendency to monopoly, and of State Legislatures to do the same thing, has never been doubted. Indeed, such combinations, if unlawful, will be regulated and restrained by the Courts under the well established principles of the common law, in the absence of any statute. No State Legislature can declare that certain facts constitute a combination in restraint of trade when, as a matter of fact, they have no such tendency whatever, but the power of the Legislature to prohibit and declare unlawful any combination, when the facts do have a tendency, however slight, towards the creation of a monopoly, is supported by a long line of decisions by the highest Court of every State in the Union, as well as by the Supreme Court of the United States.

What the California Law Declares

The California law, which we are now discussing, declares that any combination in restraint of trade or of competition between a common carrier railroad company and an oil pipe line company which is not a common carrier but which is engaged in the business of buying and selling oil, and of transporting that oil by means of a pipe line or lines from the producing points to refining or marketing points, and which common carrier railroad company operates its railroad between the same producing points and the same refining or marketing points, and is equipped for the transportation of oil and which railroad company has permitted such pipe line company to construct its pipe line along the railroad company's right of way, which was granted solely for the purpose of operating a common carrier railroad, and under which combination the common carrier railroad company maintains freight rates for oil which are so high, as compared with the cost of transporting oil through said pipe line on its right of way, as to enable the pipe line company to exercise a dominating influence on the price of oil at the producing points, and likewise at the marketing points, and which pipe line company is controlled by the same railroad company by means of its ownership of a majority of the stock of the pipe line company, is contrary to public policy and unlawful.

Supreme Court Will Uphold Constitutionality of California Laws.

I will stake my reputation as a lawyer, if I have any, that this law will be upheld as constitutional by the Supreme Court of the United States. No decision of any court in any English speaking nation has ever been to the contrary. Such a combination is clearly

unlawful under the elementary principles of the common law in the absence of any statute.

Status of the Associated Pipe Lines

The foregoing are the actual facts in relation to the Associated Pipe Line Company's two oil pipe lines from Middle California to the San Francisco Bay.

It was admitted by the Auditor of the Associated Pipe Line Company at the hearing before the Railroad Commission on the 4th of this month that the Southern Pacific Company owns 51 per cent of the stock of the Associated Oil Company.

Some years ago, Hon. James A. Garfield, as Commissioner of Corporations of the United States, made an investigation of the oil industry in the United States, and he subsequently made a report on the subject to the President of the United States, and on page 395 of that printed report I find the following, to-wit:

"This ownership of the Associated Oil stock by the Southern Pacific Company has an important bearing upon the entire situation and is regarded by the independent producers as especially obnoxious, particularly so because of numerous indications that the Associated Oil Company is in a working combination with the Standard."

State's Right to Regulate Use of Its Highways

The theory of the other law enacted by the Legislature of California is that the State has the right to control and regulate the use of its highways, and this law, therefore, provides that any oil pipe line which is more than thirty-five miles in length and which runs along, over, under or across any public highway in this State, and which is not operated as a common carrier, must take out a license and pay a license fee of 50 cents per barrel for all oil transported through said pipe lines. As an alternative, however, such oil pipe line company may operate as a common carrier without taking out a license.

License Fee Not Confiscatory—Places Pipe Line Owners on Same Footing as Independent Producers

It is urged that the license fee of 50 cents per barrel is so high that it is confiscatory. Now, the fact is that the railroad freight rates are 42 cents per barrel and that it will cost a man from 10 to 15 cents per barrel in addition thereto to transport his oil by wagons or otherwise to the railroad receiving stations. Consequently, the total cost to the producer of transporting his oil by rail to the market, in all cases where it has to be hauled from five to twenty or thirty miles to the railroad, exceeds 56 cents per barrel. The pipe line companies pump the oil from the fields to the San Francisco Bay for not to exceed 6 cents per barrel; adding this to the 50 cents per barrel license fee, would make a transportation cost of 56 cents per barrel. In other words, the license fee, instead of confiscating their property, would merely put them on a competitive basis with the producers who are forced to ship their oil on the railroad.

Associated Refuses to Carry Other Than Its Own Oil

The Associated Pipe Line refuses to carry oil for any one except the Associated Oil Company and the Kern Trading & Oil Company at any price. The Southern Pacific Railroad Company charges 42 cents per barrel for the transportation of oil from the Central California fields to Port Costa or San Francisco Bay. In

the meantime, the Associated Oil Company and the Kern Trading & Oil Company, which are both subsidiary corporations of the Southern Pacific Company, are in the business of purchasing oil at the Central California fields for the purpose of reselling the same in the San Francisco and other markets. Some of the oil so purchased is refined before being sold, but large portions of it are resold without being refined. It is a well known fact among men familiar with the business that the oil can be put through the pipes from the Central California fields to Port Costa for not to exceed 6 cents per barrel. The Associated Oil Company and the Kern Trading & Oil Company take advantage of this situation in the following manner:

How Prices Are Set

If oil is selling in the San Francisco market at 85 cents per barrel, the Associated Oil Company and the Kern Trading & Oil Company offer only 35 cents per barrel for oil on three-year-term contracts at the oil fields in Central California. They reach this price by first deducting 10 per cent, or 8½ cents per barrel, for commissions, from the market price of 85 cents per barrel, leaving 76½ cents, and by then deducting the Southern Pacific Company's rate of 42 cents per barrel from the 76½ cents, leaving a price of 34½ cents. If the producer is unwilling to accept 35 cents at the fields, he is invited to take the alternative and ship his oil over the Southern Pacific Railroad at a freight rate of 42 cents per barrel. When his oil arrives in San Francisco, if there is any very large quantity of it, the Associated Oil Company and the Kern Trading & Oil Company temporarily drop the price of oil below 35 cents and thus force the producing shipper to sell his oil for less than they offered him at the fields.

Standard's Pipe Lines

The only other pipe lines which have been constructed from the oil fields to San Francisco Bay are two which are both owned by the Standard Oil Company. The Santa Fe Railroad Company has some directors who are directors in the Standard Oil Company, or, in other words, these two corporations have interlocking directors. For some reason not yet made public, the Santa Fe Railroad Company, which is also constructed over a right of way which was given to it free by the United States Government for use solely as a common carrier railroad for the transportation of freight and passengers has permitted the Standard Oil Company to construct this competing transportation agency for oil along its right of way for more than 100 miles. The Santa Fe Railroad Company also charges 42 cents per barrel for transporting oil from the fields to San Francisco Bay. The Standard Oil Company never makes its price for fuel oil in the fields any higher than the Associated Oil Company and the Kern Trading & Oil Company offer.

Independents at Mercy of Big Companies.

Until recently the independent oil producer was at the mercy of the Associated Oil Company, the Kern Trading & Oil Company and the Standard Oil Company for the foregoing reasons. There was no other pipe line leading out of the oil fields of Central California except another pipe line to Monterey Bay, which was likewise owned by the Associated Pipe Line Company.

Status of Independent Producer Who Is Agency Member

The Union Oil Company conceived the plan of having as many as possible of the independent oil producers join with it in the building of a pipe line from the Central California oil fields to Port Harford, on the Pacific Ocean. This was done, but every independent producer who joined the Agency had to sign a contract to deliver all of his oil to the Agency to be transported through said pipe line at a cost of from 17 to 22 cents per barrel from the fields to Port Harford. When the oil gets to Port Harford, the producer is as badly off as before, but for the fact that his contract further provides that the Union Oil Company shall be his selling agent and shall have the right to fix the price at which his oil can be sold, and that he must wait for his compensation for the oil until after it has been sold by the Union Oil Company, and the transfer, storage and other charges have been deducted, besides 10 per cent commission to the Union Oil Company for making the sale. The Union Oil Company owns the ships which take the oil away from Port Harford and another 10 cents per barrel is charged for bringing the oil to either San Francisco Bay or Los Angeles, and higher charges for more distant points.

Thus the producer who joins the Agency is compelled to pay from 27 to 32 cents per barrel to get his oil from Central California to San Francisco Bay or Los Angeles.

General Petroleum's Line.

Recently the General Petroleum Company organized the General Pipe Line Company and constructed a pipe line from the oil fields in Central California to Los Angeles. The distance is only 158 miles to Los Angeles, as against about 300 miles to San Francisco Bay, but the line is built over the mountains. The General Pipe Line Company secured an option by the payment of \$500,000 upon a majority of the stock of the holding Company of the Union Oil Company. If it consummates this option, the General Petroleum Company will thus become the selling agent of the Producers' Agency and, indeed, it already exercises considerable control in that direction.

Who Controls Production Today?—The Pipe Line Owners

At the present time it is stated that the Standard Oil Company controls, by leases and otherwise, 34 per cent of the total production of oil in California; the Associated Oil Company and Kern Trading & Oil Company together control 22 per cent more of the total production of oil in California. The General Petroleum Company controls about 12 per cent of the total production of oil in California, while the Producers' Agency controls about 20 per cent of the total production of oil in California.

It will thus be seen that 88 per cent of the total oil production of California is already controlled by the Standard Oil Company, by the Associated Oil Company and Kern Trading & Oil Company, which are practically one, and by the General Petroleum Company, which is now in virtual control of the Producers' Agency. In other words, three separate interests, two of which certainly have a friendly understanding, if not a gentlemen's agreement, and all three of which probably have a friendly understanding and gentle-

men's agreement, control 88 per cent of the total oil production of California.

Industrial Development Coming

We are just on the eve of a great industrial development in this State. With the Panama Canal open, we will be flooded with cheap labor from Europe. The only cheap fuel we have in California is oil. With cheap labor and cheap fuel, manufacturing industries will spring up like mushrooms over night in California. We are now growing a considerable quantity of cotton in the Imperial Valley. Unless climatic conditions preclude us from so doing, it is inevitable that cotton manufacturing will soon be carried on in California upon a large scale. Texas raises over one-third of the cotton of the United States and it is shipped from Galveston and Arkansas Pass to Ports on the Gulf Coast. It can be brought through the Canal to Los Angeles and San Francisco as cheaply as it can be taken to the New England States.

We raise a large part of the wool which is produced in the United States on the Pacific Coast. We import from Australia the long wool which is mixed with our wool in making woolen cloth for garments. When we had cheap Chinese labor in San Francisco many years ago, we had woolen mills in San Francisco, in spite of the fact that we did not then have cheap fuel; and I can recollect that we were then said to be making the best woolen blankets that were made anywhere in the world. With the tariff off of wool and with cheap labor from Europe and cheap fuel from our oil fields, and the long wool from Australia coming in here cheaper than it can be carried to the New England States, the possibility for the development of woolen manufacturing in California is beyond computation.

Prevention of Monopoly Vital to Prosperity

In view of the developments of the near future, the preservation of our cheap fuel from monopolization by three or even by a dozen corporations is absolutely vital to the prosperity of our State.

If the oil pipe lines are not compelled to act as common carriers, and the owners thereof are permitted to be in the business of purchasing and selling oil, the independent oil producers will inevitably all be forced into bankruptcy and compelled to sell their holdings to these owners of pipe lines at a price fixed by the pipe line companies. Most of the independent oil producers are facing ruin at this minute on account of these conditions. Their only escape lies in our ability to compel the owners of oil pipe lines to operate them as common carriers at a reasonable rate for transportation.

This question is of paramount importance in California for the reason that 65 per cent of the oil produced in Central California is fuel oil as it comes from the wells. In other words, it is ready to be put in the furnace without being refined. Consequently, if the producer can compel the oil pipe line companies to transport it for him at a reasonable rate to the largest points of consumption, to-wit: To San Francisco and Los Angeles, and to there hold it in storage for him at a reasonable price for a reasonable length of time, the producers can thus sell their products at the prevailing market rates directly to the consumers. Thus competition will be maintained among the producers, and thus the consumers will reap the benefits, because

middlemen will not be able to absorb all of the reduction in price.

Oil Producers Organized for Fight

Some of the independent producers and some large consumers have already been organized into an association called the "Independent Oil Producers' and Consumers' League." This League, which independent oil producers are invited to join, proposes to put up a battle royal to compel the Standard Oil Company, the Associated Oil Company, the Kern Trading & Oil Company, the General Petroleum Company and the other pipe line Companies to give both the producers and the consumers a fair deal and to operate all pipe lines over thirty-five miles in length in the aggregate as common carriers, **charging a fair price.**

I have been employed as the attorney for this League and shall take such steps in the premises as I conclude will be effective in accomplishing the purposes mentioned.

[Editor's Note: On the 5th inst., in the Palace Hotel in San Francisco, Francis J. Heney made an address to a number of earnest oil producers and consumers, of which the above article is almost an exact duplicate. It gives the pipe line condition in this State in full and is the most authoritative detailed statement dealing with this subject ever published. This article, however, is the property of this publication and infringement on our rights without due credit will meet our attention. Mention of the meeting is made in another column.]

Seaboard's Oil & Transit Co.'s Reports

The above Company's officials have recently sent out two separate reports to the shareholders, giving the Company's financial condition in detail and showing the assets. The reports go into the plans of the directors for the rehabilitation of the Company's fortunes and urge the shareholders to pay their assessments. They show what progress has been made and divulge the plans for the immediate future. The first report, under date of July 31, but which did not reach us until August 12, advised the shareholders that 800 of them had paid; that in order to give the remainder an opportunity to pay, the date of delinquency had been set over one month, to September 8, and the date of sale from September 8 to October 8, "Thus giving all shareholders who have not paid their assessment an additional thirty days' time in which to pay the same." An inventory of the Company's properties was given in this report, these consisting of the old Madison, Section Six and Templor properties and the more recently acquired Gate City property, all in California; lastly, and probably best of all the holdings, when opportunity allows of development, the Mexican properties. The report showed the total receipts during 1912 from all sources to be \$133,343.71 with disbursements covering every cent of this amount. The liabilities, assets, cash on hand up to June 30, this year, were also given. Under "Questions and Answers" practically every question of interest to the shareholder is answered. All in a practical and straightforward manner.

In the second report, the Advisory Committee called for a shareholders' meeting to be held in Los Angeles on August 30. This meeting we have not heard any report of thus far. This second report also enclosed

a supplemental on the success of the management in obtaining a new lease on the Gate City property for ten years, beginning September 1, 1913, on a royalty basis of 10 per cent for the first five years and 12½ per cent the remaining five years. This is a signal victory for the new management. To August 13th 1,000 of the Company's shareholders had paid their assessment, an increase of 200 in two weeks. The management further states that if all the shareholders pay

their assessments "We feel certain the amount will be sufficient to carry out our plans and make it unnecessary to again assess our stockholders." Good news from the Mexican property is also given in this report.

The Company's officials appear to be making an honest effort and we hope success will attend their endeavors to pull the shareholders out of the hole and make their investment a good one.

Standard Oil Complies With Common Carrier Laws.

The Standard Oil Company has announced its compliance with the terms of the new common carrier laws and has filed its rates and conditions with the State Railroad Commission.

In its statement published in the Standard Oil Bulletin the Company announced that during the past two years it has handled not to exceed 19,000,000 barrels per year and that it has expended more than \$25,000,000 in the development of its plant. That its pipe lines are laid over its own private right-of-way and "are only sufficient for the transportation of its own private business." That the fees which the supplementary law to the Hewitt law impose, 50 cents per barrel, cannot be paid by the Company and the Company remain in business, for which reason "its lines are therefore forced into a service which the Company has neither sought nor which it could be lawfully compelled to render."—But which it nevertheless **prepares to render** "from and after the tenth day of August, 1913," when it states it will "engage in the business of transporting crude oil or petroleum by its pipe lines, as a common carrier," and "will further in every reasonable way the performance of the business which it thus engages to do, and will, so far as it can, facilitate the supervision and regulation of that business by the Railroad Commission of the State of California, while said chapter 286 is in force and binding thereon."

The transportation charges and the regulations under which the Standard Oil Company will carry the oil of independent producers, as per statement of the company filed with the State Railroad Commission in obedience to the law, are as follows:

Rates

The rates given are for minimum gravity, per barrel of 42 gallons.

Signa station to Richmond, 15 gravity, 35 cents. Midway station to Richmond, 15 gravity, 35 cents. Lost Hills to Richmond, 18 gravity, 35 cents. Wait (Kern) to Richmond, 15 gravity, 35 cents. Coalinga to Richmond, 18 gravity, 35 cents. Northam to El Segundo, 18 gravity, 8 cents. Orcutt to Port San Luis, 18 gravity, 10 cents. Pico Canyon to Ventura, 22 gravity, 18 cents.

Regulations

1—The Company will receive crude petroleum at points shown above in lots of not less than 100,000 barrels of the same gravity, all of which shall be consigned for delivery to the same delivery point.

2—Crude petroleum containing qualities injurious to other crude oil in contact therewith will not be received for transportation.

3—All such crude petroleum will be accepted for transportation only on condition that it shall be subject to such changes in kind and gravity while in transit as may result from the mixture of said crude petroleum in the pipe lines or tanks of this company.

4—The Company will charge transportation on net oil received and deliver an equal quantity of net oil, less 2 per cent to cover transportation losses.

5—It will charge storage of one-fourth of one cent per barrel per day commencing twenty-four hours after written notice to shipper that his crude petroleum has reached destination. No oil will be stored longer than ten days, and unless taken by the shipper upon the expiration of that time it will be sold for transportation, storage and other charges.

6—It will not be liable for any loss of crude petroleum caused by the act of God, the public enemy, authority of law, fire, (whether caused by explosion by spontaneous combustion or otherwise), or for loss from causes beyond the control of the company, and such loss shall be deducted pro rata from all crude petroleum in course of transportation and accrued storage charges shall be paid on the amount of crude petroleum so deducted.

7—Orders for shipment from the producer shall become operative in the order in which they shall have been received.

8—Crude petroleum will only be accepted for transportation when free from all liens and charges and all charges on account of transportation and storage of crude petroleum will be a lien against the crude petroleum until paid.

9—Crude petroleum will not be received for transportation on Sunday or legal holidays.

Independent producers are saying that those rates and regulations will look differently when the Railroad Commission gets through with them.

The "Los Angeles and San Joaquin Valley Railroad" has been incorporated by Attorney Thos. E. Gibbon of Los Angeles, he having personally subscribed for \$144,500 of the stock of the Company.

The railroad, according to a statement attributed to Mr. Gibbon, will be 135 miles in length, and the trip will not be over four hours time to the West Side fields, via the Tejon Pass. The Santa Fe from Los Angeles to the fields is 330 miles; the Southern Pacific is 226 miles and the proposed line if only 135 miles or less, would be tremendously advantageous not only to oil men but to the Los Angeles merchants and everyone living in the fields for reasons very obvious. Everyone is waiting Mr. Gibbon's next move. The road will be run by electricity.

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The Oil Authority of the Pacific Coast

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The * * *
*Derrick's
* *Creed

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

An Answer to the Scientific American

A complete reply to every objection raised by the Scientific American to an all-oil-fueled American Navy is to be found in the speech of Sir Winston Churchill, First Lord of the Admiralty, delivered in the House of Commons, London, on July 17. That speech, which is the breath of patriotism, is would be well for every American and especially for the "Scientific American" to read. It is well for America and Americans that Josephus Daniels is Secretary of our Naval Department, since he appears fully as cognizant of the value of oil to the welfare of America as Sir Winston Churchill is aware of its value to Great Britain.

* * * * *

"Blue Sky" Law Defeated

Sufficient agitation was worked up in the State to "beat out" the "Blue Sky" law enacted by the last legislature by means of invoking the referendum, so that the law is put off until 1914. While the law was very drastic, it surely was an improvement in many ways and we regret to see that it has been defeated, because this means that the "dirty work" promoters can stay in the game unless checked by the Federal law touching the use of the mails for fraudulent purposes. Well, we can't have everything at once and some mighty good laws were enacted by the "late" legislature, despite their short comings—which no legislature has ever been without.

* * * * *

Chas. A. Canfield Passes Away

The death of Chas. A. Canfield on August 16th, was a tremendous shock to oil operators all over the United States, but most directly so to Californians, as Mr. Canfield, in conjunction with E. L. Doheny and J. A. Chanslor, was the pioneer, discoverer and developer of three different fields in this state. Mr. Canfield and Mr. Doheny dug, in 1892, the oil well that opened up the Los Angeles City field, the making of Los Angeles, the biggest boost California had received since the

days of the gold rush. Following this, Mr. Canfield pioneered the Coalinga district, bringing in, under great adversity, the first oil well in that now wonderful district. Together with J. A. Chanslor, Mr. Canfield aided in developing the great Midway field and the Chanslor-Canfield Midway Oil Company, now the property of the Santa Fe Railroad, is a monument to their united efforts. Mr. Canfield was very closely associated with Mr. Doheny from the time of their discovery of the Los Angeles field to his death. Mr. Canfield was a large holder of Kern River oil lands in the earlier days of that field, and was interested in the oil business independently as well as with his famous partners. While it was as a discoverer and pioneer that he achieved his greatest fame, his philanthropies endeared his name to thousands who never knew the man. Mr. Canfield died suddenly in his own home when spending a happy hour with his family. He had lived sixty-five years of magnificent achievement; had wrought greatly for himself and the development of California and humanity as well, and passed quietly in peace, plenty and honor.

One of our greatest oil pioneers has gone—a great, kindly man has passed away.

* * * * *

Has Not Joined Agency

Contrary to all reports the General Petroleum Company has NOT joined the Agency. This we have learned from an authoritative source in the General Petroleum's executive personality. The Agency, however, will "join" the General Petroleum as soon as the General takes over the Union Oil Company.

Union Petroleum's Fire Loss Not As Serious As Reported

We are indeed pleased to inform our readers that the Union Petroleum Company of Philadelphia did not sustain anywhere near the big loss at first reported, upon the burning of a large part of their plant. We are lately in receipt of a letter from the Company from which we quote the following:

"The situation is not nearly so serious as one would be inclined to believe when considering an oil fire, whilst it was quite as serious as we desire to have.

"Our loss is slightly over \$125,000.00, but this is fully covered by insurance.

"We were fortunate in being able to save over 60 per cent of the oils we had stored and nearly 50 per cent of our buildings, so that within two days after the fire we were compounding and making deliveries, though, of course, in not as satisfactory quantity as we could desire. We have been taking care of the trade, and have had no serious complaints because of delayed delivery.

"Our engineers are preparing specifications for a remodeled plant, which in every way will be far superior to the one which was burned, and it goes without saying that the buildings which we will erect will be as nearly fireproof as it is possible to make them.

"If there is anything in this letter that you desire to print to assure the trade of our present ability to take care of business we will be very glad to have you publish it.

"Yours very truly,
"UNION PETROLEUM CO."
(Signed) "J. B. GIBB."

AMERICAN OIL IN THE ORIENT

By Bernard Westermann.

There has been a good deal said at different times, especially in California where the production is large, regarding the shrinkage of the world's market for petroleum products. Nowhere is there less cause for anxiety on such a score than on the Pacific Coast, and nowhere can the reverse, the expansion of that market in the future, be seen to better advantage.

China is the great consuming area today, but its percapita consumption at present is not one quarter what it will become in the next fifteen years, always granted that there is supply sufficient fully to meet the demand. Consumption will increase far more rapidly if the supply is large than it will if the supply is cramped or limited. It needs only a glance at the map of China and the topography of the Pacific Ocean to reassure anyone who has any doubts of future growth in the Asiatic gallonage. The dense population of China is at present congested. It is packed into a comparatively small area. It does not occupy a normal number of square feet per thousand. Consequently, the consumption of illuminating oil, while large, is not large in relation to the number of persons. When traffic conditions in China reach the point where the farmer can be rich and prosperous as well as the merchant and when economic conditions in general make for a reduction in the cost of living away from the great sea ports, then some of China's great unpeopled areas will develop and her population will spread out normally. Then great areas which are at present dark, will be lighted by the use of petroleum.

But a great factor in bringing about this spread will be the railroads. The recent reforms in China and the governmental plans for the expenditure of the money that has been borrowed, make certain the extension of railways into the interior, to the north and west. This is, of course, merely a beginning of a vast system which must be built up, a system beside which the railways of the United States as they exist at present, must appear comparatively small,—a system which must ultimately unite Siberia, Mongolia, Lower Tibet, the Province of Yunnan, Szechuan and China proper. Here is a vast field for the heavier petroleum

products and here is the transportation which is essential. So long as the 2-5 case, which has represented the limitations of China's interior trade in past years, remains the unit of multiplication, just so long we will have to count China as a market that must be carefully built up and encouraged, but as soon as railways throughout the empire, or we should say now the "Republic," are in a condition to transport bulk oil by tank cars everywhere safely and efficiently, we will find China claiming all the refined oil products that it can obtain and using them in the construction of a modern and progressive civilization.

America does not need to fear foreign competition in this great market. Foreign competition there will be represented doubtless in the future as in the past by Russian production and the production of the East Indies, but there are three great factors which make it unnecessary to discount our future prospects because of the presence of this production. First:—American oil has in the Orient a very high reputation for quality; Second:—The United States and Americans in China enjoy the favorable regard of the Chinese people; and Third:—The great and increasing production of the western part of the United States facing as it does toward Asia and with easy access to the great water ways of China, renders it economically necessary for a great consuming people to draw its supplies largely from this source.

The Chinese are essentially a race of merchants in the broadest and best sense of the term. In dealing with them it is only necessary to deal fairly and openly giving them the best and asking for a fair return. The Chinaman, as a rule, is a sufficiently good judge of human nature and business interests, to place his trade where it will be well cared for.

(Editor's Note:—Mr. Bernard Westermann, writer of the above article, was formerly engaged in the oil business in the Orient, his headquarters being at that time in Yokohama, where he is well and favorably known for his fair dealing, energy and business insight. Mr. Westermann is now in the employ of the Standard Oil Company of California, in the Standard Oil Building, San Francisco.)

Union Sells Holdings

The Union Oil Company recently realized on its half interest in the Union Oil Building, Los Angeles, the amount received being given as \$425,000, in the daily press. The Company has now announced the sale of the stock of supplies of the Union Well Supply Company, which has always been a Union subsidiary, to California National Supply Company, the well known supply house of long and good standing. The price received by the Union is said to be in the neighborhood of a half million dollars. The Union Well Supply now goes out of business and the California National will supply the Union Oil Company.

July Exports of All Classes of Oils Shipped From San Francisco and Southern California

July's exports exceeded June's by a million and a quarter gallons, thus being the largest exportation of the current year. The total shipments amounted to 32,496,141 gallons valued at \$939,307. Exports from California are no longer classified under the one head

of San Francisco, a new customs district appearing on the government's list, with the issuance of the July shipments, the same being "Southern California." Shipments from the two California points during the month of July were as follows:

Crude	Gallons	Dollars
Southern California	4,116,030	73,500
Illuminating		
San Francisco	12,962,795	587,656
Southern California	200	38
Lubricating and Paraffin		
San Francisco	57,849	12,223
Southern California	575	180
Napthas, Gasoline, Etc.		
San Francisco	11,918	1,828
Southern California	2,111	266
Residuum, Gas Oil and Fuel Oil, Etc.		
San Francisco	15,317,052	263,023
Southern California	27,611	493
	32,496,141	939,307

Full comparisons with June shipments and values may be had by referring to the July issue of the Derrick.

California Production for and Field Operations During July, 1913

The July production exceeded that for June by 163,905 barrels. This was due to two causes: an increase in daily output of 6,247 barrels, and the extra day in July. The total output for July was 8,573,906 barrels, the daily average production being 276,578 barrels.

Consumption for July totalled 8,325,402 barrels a daily average of 285,61 barrels. This is an increase in the gross shipments of 313,571 barrels, and an increase in the daily average sales of 1,500 barrels.

The total amount of oil produced during the first seven months of this year is 56,028,357 barrels. The total barrelage marketed is 55,779,853 barrels. Production is therefore ahead of consumption thus far to the extent of 248,504 barrels; 20,000 barrels less than a day's consumption.

Standing of the Various Fields

Midway's mammoth July output brought up its daily average from 85,328 to 90,747 barrels. This tremendous production pace was set by the big Standard wells, which are still making immense flows. The daily average is greater by fully 75 per cent than that of the next largest producing field, Coalinga. The average daily increase for the Midway district over the June output was 5,419 barrels. Kern River increased 385 barrels in daily output; McKittrick 81 barrels; Sunset 1,464 barrels; Whittier 1,504 barrels; Santa Maria 415 barrels; Newhall 24 and Watsonville 3 barrels. Excepting the Puente field, the daily output of which re-

mained constant at 80 barrels, all the other fields show losses in daily average as follows: Coalinga decreased its daily output 751 barrels; Fullerton Brea, 1,614 barrels; Salt Lake, 421 barrels; Lost Hills 99 barrels; Los Angeles, 77 barrels; Santa Paula and Lompoc 40 barrels, and Summerland 5 barrels. Daily averages are shown in the regular column.

Rigs, Wells Drilling, Etc.

There were 48 rigs completed in July, this being the same number as in June. Drilling wells decreased from 373 in June to 337 in July. Producers increased from 5,997 to 6,035, or 38, although 67 wells were completed during the month, as against 64 completions in June. Number of wells abandoned was 5, compared with 17 during June.

The statewide average production per well per day during July was 45.83 barrels, an increase of .75 barrels per well per day over the June figure of 45.08 barrels. We find that the highest statewide per day well output thus far this year was for the month of February, the figure reaching 46.01 barrels. The lowest well output thus far in 1913 was for the month of January, when the average daily production was 43.38 barrels. While these details are not of absorbing interest to the average reader, to the operator making a study of production they will be of material value.

Following is our regular table giving all the usual details:

FIELD	Rigs Comp.	Wells Drilling	Wells Producing	Wells Com- pleted	Wells Aban- doned	Daily Av. Prod. Ea. Field (To within 1-2 Bbl) June	July	Production for Month
Kern River	3	10	1663	...	...	29,505	29,890	926,590
McKittrick	4	11	314	12	...	18,779	18,860	584,666
Midway	18	83	870	27	3	85,328	90,747	2,813,167
Sunset	1	36	264	2	...	16,354	17,818	552,358
Coalinga	6	60	902	4	...	54,118	53,367	1,654,470
Watsonville .....	...	...	5	...	...	75	78	2,325
Lompoc .....	...	3	29	...	...	3,260	3,220	99,820
Santa Maria .....	...	9	191	3	...	14,310	14,725	456,475
Summerland .....	...	...	122	...	...	170	165	5,105
Santa Paula	2	23	331	3	2	2,586	2,546	78,925
Newhall .....	...	2	76	...	...	296	320	9,908
Salt Lake	1	12	296	3	...	7,713	7,292	226,054
Los Angeles .....	...	...	400	...	...	1,041	964	29,899
Whittier-Coyote	1	16	142	1	...	4,666	6,170	191,284
Puente .....	...	...	54	...	...	80	80	2,480
Fullerton-Brea Canon ...	7	54	296	5	...	22,329	20,715	642,170
Lost Hills	5	15	89	7	...	9,719	9,620	298,210
Salinas Valley .....	...	2	...	...	...	...	...	...
Repetto .....	...	1	...	...	...	...	...	...
	48	327	6035	67	5			8,573,906

Summary

	Barrels.
Stocks, June 30, 1913	46,389,669
Prod, July, 1913	8,573,906
	54,963,575
Consumption, July, 1913	8,325,402
	46,638,173
Stocks, July 31, 1913	46,638,173
Daily Ave. Production	276,578
Daily Ave. Consumption	268,561
	8,017
Daily Ave. Surplus	8,017

Shells Buy Cal. Oilfields, Ltd.

Officials of the American Gasoline Co., subsidiary of the Royal Dutch-Shell combination, confirm the report of the purchase by the Shell Transport & Trading Co., and The Royal Dutch Petroleum Co., of the property of the California Oilfields, Ltd., one of the best equipped, managed and best propertied companies in this State. The sale is subject to the approval of the shareholders of the Company, and brings to them, when approved, close to \$14,000,000. There is little doubt of

its approval. Thus the Dutch-Shell have at last made the long promised and expected entry in the producing business in California, and, we are told by Mr. H. R. Gallagher of the American Gasoline Co., they "have only begun." The Company is now on the lookout for good properties and we understand that a pipeline will probably be built to tidewater from the Coalinga field, at no distant date. It is superfluous to state that big activity is only awaiting the opening of the canal, when oil will wake up with a rush.

Interesting Developments of Recent Date

LA HABRA VALLEY OPERATIONS

The Petroleum Company

The Petroleum Company, operating their 120 acre tract on section 24, 3-10, at the present time have a production of 800 barrels per day from three wells. While the Company has 3800 acres, the 120 acre tract has thus far kept the management almost fully occupied, and most profitably so. The Company's oil is sold to the Standard at the regular rate paid in La Habra Valley for this grade oil—65 cents per barrel. Until the valley oil reached Los Angeles, the price was 70 cents. Well No. 4, drilling with Standard tools, is now below 3200 feet in depth and is in the oil sand. It should be completed and on production in the near future, if all goes well. The well gives every indication of being a good producer. Well No. 5, drilling with rotary tools, is now down 2300 feet, remarkable speed having been made, the 15-inch hole having been started on July 27, a month and ten days ago. The rig is up for well No. 6, and it will soon be spudded in. No. 6 being further down the anticline, is not expected that the oil will be entered at a depth shallower than 3300 feet. The Company's Nino No. 1, just completed, is now ready to be placed on the beam. Altogether the Company is making an excellent showing, the business being conducted by experienced oil men, the President, Mr. M. H. Mosier, having been in the business all his life and being an operator of extensive experience in most of the Eastern fields. Mr. Mosier tells the Derrick that he finds California conditions superior to conditions in the Eastern and Midcontinent fields in spite of the higher rates paid for oil East of the Rockies. We can look right down from our lease and see the blue ocean—and my! that water does look good to me! Being right at hand it spells 'emancipation' to the small coast operator from the domination of the large marketing and pipe line concerns. In addition to having the ocean market at our door, we have the splendid roads—nothing like it in the Midcontinent, I can assure you." Mr. Mosier has been engaged in the natural gas business as well as being an oil operator and has a ground floor knowledge of oil and gas conditions East and West. He and Colonel Tim Spellaey are old time acquaintances, and enjoy many a talk on the "days gone by" as well as those of the present.

Thos. Strain's Well

Thos. Strain's well No. 2 is now down 3000 feet, where it is being cemented. This is Mr. Strain's second well, No. 1 having been lost at 2000 feet. Nearby operators believe the hole will make a good well, the location being considered very fair. Mr. Strain, who is an orange rancher, owns 100 acres. When operations began to get near to his property he got the fever and in spite of the loss of his first hole, he kept on. Mr. Strain is an elderly man, and it is said that he had in the bank some \$60,000 on which to draw to drill with. It takes nerve to put the savings of a life time into a "hole in the ground" and everybody wishes the plucky operator success.

Monte Cristo

This Company operating on section 24, on the Armstrong lease, is cementing off at 3550 feet. Well is said to have good indications.

Brand-Stevens

On the Ortega lease the Brand-Stevens well is down 3500 odd feet, and as we go to press they are reported to be cutting their 6-inch pipe with a view of reaming down and landing it. This property is also located on section 24.

N. A. Oil, Consolidated

This Company's well on the Kloeke ranch, section 24, is being "fished" at 2000 feet. A lovely job, pending the outcome of which things will not progress greatly.

McAnders Oil Co.

McAnders well, section 24, is down about 1000 feet and being drilled daytime only, holding off, as it were, until "things are easier." Present drilling is said to be for the purpose of holding lease.

S. O. Chapman Well

The above well of the Standard is down about 2000 feet drilling in very hard formation, with Standard tools, having changed from the rotary with which no progress could be made. Location, section 26.

Emery Wells

The Standard is drilling the East line of their Emery property, section 13, 3-11. The Murphy Oil Company, operating the adjoining piece, is off-setting.

Amalgamated

The Amalgamated Co. is drilling its in fee holdings west of its production on the Anaheim Union Water Company.

S. O.'s well on the Bixby ranch, a mile southeast of Olive and six miles south of the Olinda field, is 2200 feet deep. Indications are promising, tar sand having been passed through from 500 to 1200 feet. The well should be completed within the next 300 or 400 feet. A good well will open an entirely new district.

Cresceus Oil Co.

On October 22 of this year the Cresceus Oil Company will have been closed down for a full year. A production of 72,000 barrels would have been put on the market in this time, without drilling new wells. But the oil being of low gravity, from 14.5 to 15 degrees Baume, there has been no market for it, so that a shut down was imperative. We do not know exactly when this property may be running again. Chances are that it will not be until there is a better demand for the lower gravity products.

The Pinal-Dome Oil Company has issued its annual statement showing total assets aggregating \$4,069,245.73, and a surplus of \$429,900.16. In fact, the Company is in a most enviable financial position. The Company controls in fee and by lease, 4257 acres in the Santa Maria field and 160 acres in North Midway, with about 60 producing wells in all, and controls the Pinal-Dome Refining and Los Angeles Distributing Companies.

Caribou Oil is again paying 1 per cent monthly—after having paid over \$1,400,000 in dividends. A remarkable company.

Company Reports

THE SPELLACY-THOMPSON COMPANIES

Mascot

The Mascot, Twenty-five Hill, Taft, is now capable of producing 50,000 barrels of oil per month, according to the superintendent. About 45,000 barrels is being delivered to the Union Oil Company monthly under the contract entered into a number of months ago, while the contract calls for only 35,000 barrels per month. 45,000 has been taken the past two months. The contract calls for 34 cents per barrel. It terminates Oct. 1. Dividends of one per cent monthly will be paid if the contract is continued, although the present price is not a great deal more than cost of production. The shut-down was a time of entire loss to the Company, except in that the oil was not sold at cost, and the stock thus depleted. With the new conditions in the oil business, that is, as regards the pipe lines being common carriers, the Company may possibly embark in marketing its own oil. The Canal will soon be opened and European tankers will soon be calling for oil. Possibly they will buy direct and not from any intermediary. This may cut the pipe lines out of considerable business. However, this is considerably in the future; probably from six months to a year in the future, at the earliest. The knowledge that if the present contract is continued, dividends will be paid, will undoubtedly be a most pleasant surprise to the stockholders.

Premier

While the property of the Premier is one of the best handled and one of the "prettiest" and best located properties in the entire Coalinga field, the Company is a member of the Agency, and is getting but a small profit only, and so is still unable to declare dividends. However, the Company has fifteen producers, the oil being of about 16 gravity, and controls 160 acres, and dividends of from 6 per cent to 12 per cent per annum may be declared in the early future. The Company's lease should be worth about \$10,000 an acre. The value of the shares is consequently in no wise represented by the stock market price, though to holders who need ready money this would probably be received with incredulity; at any rate until the "good times" come back.

Mexican Premier

Until troublous Mexico is more settled, the Mexican Premier will not attempt to complete its well. The casing was carried down 2350 feet, a large part of the expence being borne by Spellacy and Thompson personally. A good oil sand was passed through and every indication was that a good well would be obtained when the hole was finished. But the troubles in that country, the tightness of the money market and the fact that Col. Spellacy and Mr. Thompson had put up a tremendous amount of their own money, made it necessary to call a halt until monetary conditions here and government conditions in our sister "Republic" improve. Col. Spellacy informs us that as soon as possible the work on the well will be continued.

Oil Producers' and Consumers' League Meets

The above League met on the 5th inst., at the Palace Hotel, for the purpose of enlisting new members to aid the cause, forcing compliance with the recently enacted

Pipe Line laws. Col. Tim Spellacy presided. Speeches were made by Francis J. Heney, J. W. Jameson, Col. Spellacy, M. H. Mosier, R. R. Pollack, J. B. Elliott, T. J. Wrampelmeier, and Mr. Turner, of the Pacific Pipe Line Company. Among those recognized by the Derrick's representative, there were present in addition to those mentioned the following: Messrs. Pauson, Seeley, Hinkel, Lewis and other independents who comfortably filled the room.

Francis J. Heney's address covers the entire subject discussed, except for a few short speeches on the Standard's "prohibitory rates and conditions," the coming prosperity in this State, and the necessity for keeping right after the case now before the Railroad Commission, where the Associated and K. T. & O. Companies are fighting the pipe line laws. The Associated and K. T. & O. Companies have secured a temporary injunction restraining the Railroad Commission from assuming control over their pipe line rates. A hearing on this matter is expected to come up about the 17th to 20th of September.

California produced 10,502 tons of magnesite in 1912, a gain of 1000 tons over the 1911 output.

Kansas crude oil is now selling for \$1.03—70 cents more than California crude fuel oil. The Kansas laws do it.

The White Star Oil Company, little Sespe Canyon, Ventura County, will dynamite its No. 8 well, which is 330 feet deep, in an effort to increase its flow.

Texas produced 7,470,373,000 cubic feet of gas in 1912. Value: \$1,405,077. Gas should soon become a real commercial factor in California, seeing that we have it in quantity.

The geological survey has published as "advance chapter N. from Bulletin 540" a paper entitled "Potash and Other Salines." This discusses the brines of Death Valley and Saline Valley, California, and other regions.

San Diego Wells

The following reports are taken from the columns of the San Diego News (by courtesy of the editor of that publication):—

Work is being "vigorously prosecuted" in the drilling of the "Pacific Laguna" Company's well near Encinitas.

The Lo Tengo well in the Otay district is down 2912 feet, with considerable gas.

The Ventura-Pacific hole is being underreamed "for the purpose of carrying the 9 5-8 inch casing down to the top of the cap rock", in order to shut off a bad cave.

The South Fullerton Oil Co.'s well is now 3930 feet deep and has passed through 150 feet of oil sand drilling through the last 600 feet. The last two strata have been respectively 37 and 52 feet in thickness. All the evidences are that a good well is to be obtained. On the strength of the showing the company has discontinued the sale of its treasury stock.

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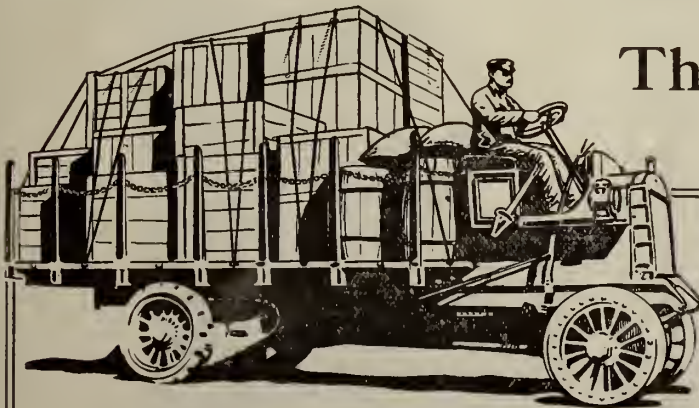
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STANDARD OIL COMPANY

CALIFORNIA
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THE STOCK MARKET

The lethargy in oil stock trading continues. Both exchanges are dull. In the large-company shares trading is very dull indeed. And small wonder at the prices offered. In the par value shares trading is somewhat brisker. The investing public evidently feels that the big shares offer too much opportunity for quick and large losses, whether this be so or not. The smaller priced shares, selling at from 2 cents to a dollar, are finding much more favor. Nevertheless, with Union between \$50 and \$55, there isn't much of the speculative element connected with its purchase—the property's value remains, no matter how hard the stock is hammered. And that value will assert itself under more promising market conditions, when stability in the management is a settled matter. Again, Amalgamated is paying very high dividends and paying regularly. Still, it is not quoted within 15 points of par. In spite of their dividend payments Associated shares are not commanding must attention. The market reflects the public's lack of desire to invest or speculate to any great degree at this time, no matter how good some of the present buys are. The idea of Premier, for instance, being sold at 15 cents per share, where it has lately been quoted, is, from a common sense viewpoint, knowing the property and its production possibilities, utterly preposterous. And there are other stocks similarly to be mentioned, their stock market value having declined in like ratio to that of Premier.

Following are the latest San Francisco quotations:

Company—	Bid.	Asked.
Amalgamated Oil	85.00	86.00
Associated Oil Stock	41.25	.....
Caribou .....	.....	1.00
Claremont .....	.....	.57
Coalinga Central .....	.20	.24
Coalinga Mohawk .....	.90	.95
Midway Premier .....	.08	.....
Oreutt Oil .....	.85	.....
Palmer Union .....	.02	.....
Premier .....	.20	.....
Republic .....	.10	.....
Sauer Dough .....	.....	1.20
S. W. & B. .....	.10	.....
Sunset Monarch .....	.....	1.00
United Oil .....	.06	.....

Los Angeles Quotations

Following are the latest quotations on the Los Angeles Exchange, where trading is livelier than here:

Company—	Bid.	Asked.
Amalgamated Oil	84.50	86.00
Associated Oil	41.50	41.87½
Bear Creek Oil & M. Co. ....	.67½	.....
Brookshire Oil .....	.....	.50
California Midway Oil Co. ....	.067½	.....
Central .....	.80	.90
Columbia .....	.....	.85
Continental Oil .....	.....	.30
Enos Oil Co. ....	.....	.10
Fullerton Oil	1.50	.....
Globe .....	.01	.03
Jade Oil Co. ....	.03½	.05
Maricopa Northern .....	.09	.09½

Maricopa Queen Oil Co. ....	.....	.50
Mascot Oil Co. ....	.....	.75
Mexican Pet. Ltd. "Pfd."	75.00	.....
Midway Northern .....	.41	.437½
National Pacific Oil Co. ....	.04	.04½
New Pennsylv. Pet. Co. ....	.....	.45
Olinda Land Co. (Oil) .....	.....	.30
Penn. Midway Oil Co. ....	.07½	.....
Piru Oil & L. Co. ....	.20	.....
Rice Ranch Oil Co. ....	.65	1.00
Trader's Oil Co. ....	.....	45.00
Union	54.75	55.00
Union Provident Co.	64.00	67.00
United Petroleum	64.00	67.00
United Oil Co. ....	.06	.08
Western Union	65.00	.....

Honolulu's Assessment

The Honolulu Consolidated Oil Company has levied an assessment of 10 cents per share, which will net the Company about \$300,000, the same to be used in taking care of the Company's half-million dollar indebtedness. The Company sold between March 31, 1912, and March, 31, 1913, over a million barrels of oil at a net profit of \$199,364. The Company is considered in a good condition, but in need of immediate money.

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12,000 Barrels Daily of 28° Gravity Oil



Photo Courtesy Standard Oil Bulletin

STANDARD OIL'S "McNEE NO. 10," SECTION 36, 31-23, MIDWAY, PRODUCED 40,000 BARRELS DAILY WHEN BROUGHT IN. THE STANDARD PAYS 60 CENTS PER BARREL FOR THIS QUALITY OIL—\$24,000 PER DAY WAS THE INITIAL REVENUE. THE REVENUE NOW IS AT THE RATE OF \$7,200 DAILY. THE WELL COST \$40,000.

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✧* The Pipe Line Hearings *✧

Standard Pipe Line Hearing Before Railroad Commission

Before the State Railroad Commission, at a meeting held in the Commission's office in this city on September 30, the details of operation of the Standard Oil Company's pipe lines, the amount of oil handled, percentage of that oil produced by the company, reasons for not desiring to handle low gravity oil, and other material facts necessary for the Commissioners to know, were elicited from H. M. Storey, director of pipe line operations of the Standard. The testimony was of a most interesting nature taking practically the entire morning.

Mr. Storey testified that the company did not care to transport oil under 18 gravity because it had to be handled differently than the higher gravity oils. He stated the company divided oils into classes for sending through the pipes; the general run averaged 24 gravity; that when 15 gravity oil is to be run, it is gathered into "batches" of from 250,000 to 500,000 barrels, and never has a less quantity than 100,000 barrels of low gravity oil been sent through the pipes. Weeks elapsed, he said, between the times that the batches of low gravity oils are transported. All of the crude oils are heated preparatory to going through the pipes. The low gravity oils are heated to about 165 degrees Fahrenheit so they will run easily.

The pipe line details of the company, as explained by Mr. Storey, are as follows:

Line from Pico to Ventura, length 44.19 miles, some of two-inch and some of three-inch pipe. Capacity 1400 barrels daily. Field produces about 2000 barrels, of which the Standard production is 200 barrels. Oil all used at the El Segundo or Richmond refineries.

Bakersfield to Richmond, 280.6 miles of duplicated 8-inch line, with 64 miles of 12-inch loop north of Mendota. Total capacity about 65,000 barrels daily, operated at full capacity. Company produces 39,000 barrels of this, and is buying about 50,000 barrels a day,

storing at Wait what is not sent through the pipes. Total output of the fields served by the line about 265,000 barrels a day.

Coalinga to Maricopa, 29.2 miles of 8-inch pipe with 20 miles of 6-inch loop. Capacity 28,000 barrels a day, and about 23,000 barrels daily is being sent through the pipes. Oil averages 24 gravity. The Coalinga field produces about 55,000 barrels a day, of which 2000 barrels is produced by the Standard Oil.

Northam, Orange County, to El Segundo, 23.09 miles of 6-inch pipe. Capacity is 9000 barrels a day, about one-fifth of which is produced on the company's land. Operating at full capacity. Oil runs 23 gravity.

Midway to Bakersfield, two 8-inch lines with a 12-inch loop. Line 32.3 miles of 8-inch and 14.3 miles of loop. Capacity 65,000 barrels a day and the line used to full capacity. Company producing about 35,000 barrels a day in this field, the gravity being 23 or 24.

Oreutt to Port San Luis, 32.52 miles of 8-inch pipe. Capacity 20,000 barrels a day. The company is not handling to exceed 200 barrels a day, so that this pipe is practically idle. No Santa Maria oil to be had.

Lost Hills to Pond, 21.1 miles of 8-inch pipe. Capacity 20,000 barrels a day. About 5000 barrels being handled. Mr. Storey intimated that the construction of pipes into Lost Hills by the Standard and its competitors had never been warranted by the business.

Mr. Storey also gave the details of the storage capacity of the company along the various lines saying that it was small except at Wait, where there is capacity for from 28,000,000 to 30,000,000 barrels of oil. He promised to provide the state with all details as to where the lines cross public highways and railroads.

From the data presented above it appears that the Standard is producing about 78,000 barrels per day, as near as can be reckoned, out of the present daily production of 284,000 barrels, produced by all the companies in the state. How much oil the Standard is handling daily we are not able to exactly determine, but from the statement in the Standard Oil Bulletin we gather that it is in the neighborhood of 2,000,000 barrels per month.

Further data will be presented in the Derrick as it is obtainable.

Hearing on Injunction Restraining Railroad Commission

On September 29th the motion for injunction restraining the Railroad Commission from enforcing the pipe line laws was argued in the United States District Court before Judges Gilbert, Morrow and Dooling, sitting en banc. The proceedings occupied the entire day, from 10 a. m. until 5 p. m. Very few people attended the hearing as the case was brought up about ten days in advance of the expected date, owing to the law that requires three judges to hear motions of this character.

The attorneys seeking to make the injunction permanent attacked all three of the pipe line bills as unconstitutional and occupied fully three-fourths of the day in presenting their argument. The Associated and Kern Trading & Oil Companies were represented by Attorneys Tausky, Henley Booth and Stanley Moore. Max Thelan, member of the Railroad Com-

mission, and its attorney, met the motion for injunction with a motion to dismiss as to the Commission, upon the ground that the court lacked jurisdiction, since the Railroad Commission was acting solely under the Common Carrier Act and the Public Utilities Act, and in either a legislative or judicial way. Mr. Thelan also suggested the dismissal as to the Associated Pipe Line Company, since it appeared from the bill that this company was merely a "child of the two plaintiffs that wishes to behave itself and comply with the law, but was prevented from so doing by its parents." This neat little sarcasm brought quite a laugh from a number of those present.

Attorney General Webb made a similar motion to that made by Commissioner Thelan. At the conclusion of the oral arguments, permission was granted to file briefs. Francis J. Heney and James F. Farraher as *amicus curie*, will file briefs in support of the constitutionality of the law. Five days was given the plaintiffs to file their briefs and five to the defendants in the action to file their reply.

California Production for and Field Operations During August, 1913

Statistical Changes

The Standard Oil Company has made a change in the manner of presenting its splendid statistical table covering monthly production, consumption and field operations; and also a change in the publication of this data which henceforth will be first published in the company's own book, "The Standard Oil Bulletin." Hereafter this data will be available when the "Bulletin" is published—not before.

The data is now presented in a quite condensed form as compared with formerly. The statistics of closely related fields are now combined according to convenience. Thus we are unable to follow out in detail the drilling and other statistics in each individual field, comparing with statistics of the foregoing month. The new order of presentation follows:

The Midway and Sunset statistics are combined. There is no sense in their being separated, in view of the fact that there is now no distinct line of cleavage between the two fields.

The Lost Hills and Belridge fields are combined. Belridge was formerly included in the McKittrick district.

Lompoc and Santa Maria are combined. Ventura County and Newhall are combined. Los Angeles and Salt Lake are combined. Whittier-Coyote and Fullerton-Brea Canyon are combined into "Whittier-Fullerton."

It goes without saying that those who have followed the operations presented in detail heretofore are going to miss the detailed figures.

The "well abandoned" column has been abandoned. Also production for the month is not given, although we present it to our readers. Storage and consumption were not given in the last figures gotten out by the Standard but we believe we may be able to get these figures from them. This remains to be seen and in the meantime we present such figures as we have received.

Following is the new table:

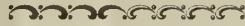
FIELD	—WELLS—				— PRODUCTION —	
	New Rgs.	Drig.	Comp.	Tot. Pro.	Per Day	Per Mo.
Kern River	7	9	7	1666	28,770	891,970
McKittrick	1	1	4	267	11,780	365,180
Midway and Sunset.....	23	120	19	1125	118,443	3,671,733
Lost Hills & Belridge.....	12	18	13	146	15,648	485,088
Coalinga	6	60	2	909	51,760	1,604,560
Lompoc & Santa Maria....	2	12	..	222	18,290	566,990
Ventura Co. & Newhall....	5	29	1	411	2,715	84,165
Los Angeles & Salt Lake....	1	10	1	698	8,125	251,875
Whittier Fullerton	5	79	2	498	28,331	878,261
Summerland .....	..	1	..	122	166	5,146
Watsonville .....	..	..	..	5	75	2,325
Salinas Valley .....	..	..	..	..	..	..
Totals	62	339	49	6069	284,103	8,807,193

This morning, October 1, just before going to press, through the courtesy of the Standard Oil Company, we were given the balance of the data usually published, except for the number of wells abandoned. The total production for August was 8,807,193 barrels, the highest on record. A large part of the gain is due to the Standard's immense gushers on the McNee property in Midway, one of which is a near neighbor of the Lakeview, from the viewpoint of initial production.

Total consumption, or shipments for August, exceeded eight and a half million barrels; exact figures, 8,502,110. The total production for the first eight months of 1913 is thus brought up to 64,835,550 barrels. Total consumption for the same period was 64,281,963 barrels, only 553,587 barrels less than production. Total storage on hand September 1, was 46,943,243 barrels.

Inasmuch as this last data was left out of the Standard's own paper, we feel very pleased to be able to present it to our readers, the only people to get the same this month

KEEPING UP WITH STANDARD OIL



STANDARD OIL COMPANY SUBMITS STATEMENT TO ITS SHAREHOLDERS

In the September issue of the Standard Oil Bulletin the company submitted the following statement to its shareholders:

Some of our stockholders have written to inquire about the acts of the last legislature to make pipe lines common carriers.

As the number of stockholders of the Standard Oil Company now reaches 5,600, many of whom are residents of California, it will be more convenient to answer these inquiries collectively through the Bulletin. There was printed in the last number of this paper a statement filed by the Company with the Railroad Commission of California, setting forth the manner in which its plant has been developed, why the pipe lines have been laid and their necessity for transacting its business. The Company has never been engaged in piping oil for others, with or without compensation. Its rights of way for these lines have been bought from owners of the land over which they pass. Wherever the pipes crossed the public roads, permission has been obtained from the proper authorities to go under these highways. The same kind of permission has frequently been granted to private owners of ditches used for irrigating their lands.

The Standard Oil Company expended more than fourteen million dollars in exploring the oil fields of California before receiving one dollar of profit in return, and the greater proportion of such profits have been reinvested in the state in the construction of new plant and additional facilities needed to handle the continual increased production of crude oil over the current consumption. The enterprise today represents an outlay of about seventy millions including the large fleet of vessels used for transporting crude and refined oils.

The Standard Oil Company was formed under the laws of California to conduct a private business only, as stated in its articles of incorporation. The Company has always paid all taxes assessed against it in this state. Its corporate franchise tax alone for this year (of which the first installment of one-half has already been paid) is \$84,870. This is paid by the Company to the state for the privilege of doing business as a corporation pursuant to the purposes for which it was formed under the California laws.

The last legislature passed an act requiring the Company to pay a further license tax of fifty cents on every barrel of oil passed through its pipes, or devote these pipe lines to public use. The full capacity of the lines is required for its private business, and the officers of the Company were put to the election of accepting the act or risking the payment of these license fees.

This tax of fifty cents a barrel is more than the original price of the oil. On the business now done by the Company it would amount to about one million dollars a month. By the time a final decision could be reached in the courts, the total of these exactions would likely reach fifty millions, if the business continued as now—and the recall might be threatened or invoked against any judge who decided against the legality of these license fees.

It did not seem prudent to subject the stockholders to these risks of litigation. They will have to bear any losses resulting to the business of the Company under these pipe line acts. The officers of the Company realize that these are serious questions, but the legislature, and not they, is responsible for them.

THE DISTRIBUTION OF PETROLEUM PRODUCTS

How the Standard Oil Company Distributes Forty-five Thousand Carloads of Products to Its Customers in One Year—Shipments on Which the Transportation Charges in 1912 Amounted to over
\$5,750,000.00

(From the Standard Oil Bulletin)

If only they had been within reach, an armful of provisions might have saved the lives of Captain Scott and his comrades in the South Polar expedition. To the victims of the flood-swept states in the Middle West last April a trainload of supplies would have been worth many times its normal value, if only it could have been delivered on the day following the disaster. In both cases it was a matter not of supply, but of getting the supply.

New York City lives continually only a few hours removed from starvation. Its very existence is dependent on the distributing facilities through which it is supplied. Throughout the world of business, it is a question today not merely of what's what, but where. Distribution is second only to production, and the finest product on earth is useless unless it can be delivered to the man who wants it, when he wants it, and where he wants it.

It is with this object of supplementing "Standard" quality of product by "Standard" service in delivery, that the Standard Oil Company has built up its extensive distributing system—a system which during January of this year, for example, when severe frosts threatened to destroy the fruit crops of Southern California, enabled the Company to deliver Star Fuel Oil for orchard heating at the rate of 100 tank cars a day, and thus kept all customers supplied at a critical time when every hour of delay meant the loss of many thousands of dollars.

For its work of distribution, the Standard Oil Company maintains 158 storage distributing stations, to which its products are shipped from the refineries and from which they are in turn distributed to the trade or the consumer. These stations are located throughout the Pacific Coast states and include also, Nome, Alaska, and Honolulu, Hawaii. The establishment of these stations (at points from which communities can be supplied most economically) and the maintenance of their sales and delivery service, constitute one of the most important features in the distribution of the Company's products.

With this matter of final delivery, the public is more or less acquainted, for the Company's trucks and delivery wagons are a familiar sight on the streets of almost every city and town. Few people, however, real-

ize the vast work of transportation involved in supplying the distributing stations so that they are always prepared to make these local deliveries. For the transportation of petroleum products between the refineries and its distributing points, the Company owns a fleet of twenty-eight vessels and uses them exclusively in this service (a service which will be described more completely in a later issue.)

Only a portion of this bulk transportation, however, is handled by water. During 1911, the railroad freight charges on the Company's products amounted to four and one-half million dollars and in 1912 to over five and three-quarters million dollars. (These figures include some comparatively small shipments made by water in other than Company's ships.) These charges represent shipments in 1912 of over 35,000 tank-car loads of petroleum products in bulk, and 12,000 car loads of barrel and case goods—an average of over 900 cars a week throughout the year.

A business of this magnitude can only be handled by means of a well organized traffic department, and the Company employs today a staff of thirty people in its general offices at San Francisco (with branches at Los Angeles and Portland), engaged in the routing and handling of all shipments, so that its service to customers may be maintained at highest efficiency.

In earlier days no such department was required, for as recently as 1907 the Company had only 350 tank-cars engaged in its carrying trade. Today over 1600 cars carrying petroleum products of the Standard Oil Company are in active service—all under the direct control of this traffic department.

Freight tariffs of practically every railroad in the country are on file in this department, thus enabling the Company to route each shipment so as to involve the least expense and delay both for itself and its customers. The efficiency with which these traffic matters are handled is indicated by the fact that during 1912 the department returned to the railroads for adjustment, 6929 freight bills. Of these, 5077 made overcharges amounting to \$123,421.80 and 1852 made undercharges amounting to \$24,249.83.

The same care and attention to detail which made this possible, also affects directly the quality of the Company's service to its customers. During busy seasons, for instance, car load shipments are not simply turned over to the railroads to handle at leisure. At such times a representative of the Standard Oil Company is located in the railroad yards to see that cars are properly handled and forwarded without delay. The Company takes pride in putting through rush shipments whenever the customer's needs make this necessary. On July 12, at 10 o'clock, an order for a car load of Star Asphaltum was received in San Francisco. At 11:45 the car was loaded at the Richmond refinery. At 12:15 it left the refinery and at 1:15 was set down on the customer's siding in Oakland—an elapsed time from order to delivery of only three hours and fifteen minutes.

One of the important factors in reducing the cost of petroleum products has been the bulk method of handling in transportation—the tank-steamer and tank-car method as contrasted with the old barrel and can method. It was in 1882 that the Standard Oil Company put its first tank-car into service, and ever since that date the Company has been extending and improving its transportation facilities, endeavoring always to handle products in the way that would make for

promptness in delivery and reduction in cost, even though the equipment necessary to do this involved the investment of large sums of money. The Company, in short, seeks not only to manufacture products of the highest quality, but to make them easily available to all the people. It aims to serve the remote farm house with the same promptness and courtesy as its largest customer in the city and to handle with equal efficiency an order for 50 tank-cars of fuel oil or a half pound carton of Parowax.

A distributing system including 464 miles of pipelines leading from the oil fields to the refineries, 1600 tank-cars, a fleet of 28 tank-vessels, tugs, and barges, hundreds of tank-wagons and trucks, 15 main storage and supply stations and 143 circuit stations tributary to these, enables the Company to serve efficiently even those customers who go the old saying one better and demand: "I want what I want, when I want it, where I want it."

Notes From the Standard Oil Bulletin

The Steffanson Arctic Expedition, which left Nome, Alaska, the latter part of July, purchased the following Standard products: 1900 gallons Red Crown gasoline; 15,000 gallons engine distillate; 680 gallons cylinder oil and 2800 gallons of Pearl oil. The supplies were bought for use by two gasoline schooners of 70 tons burden each. The hard service they will be put to makes the purchase of "Standard" oils very necessary.

The Standard is supplying its auto using trade with a new convenience in the form of a 30-gallon storage tank in which to keep zerolene in bulk. When purchased in bulk the consumer gets more lubricant for his money. The new tank is equipped with a padlock on the faucet, "to provide against the use of the oil by unauthorized persons."

The Standard is having "special feature exhibits" every week in their "show room" on the main floor of their new building. All Standard products are shown and the exhibit room is beautifully managed. It is the finest petroleum display the editor of this journal has ever seen.

Issues Denial

In the September issue of the "Bulletin," President D. G. Schofield, of the Standard, issues a flat denial of statements made in the article in the Los Angeles "Express," wherein it was charged or insinuated that the Standard was "behind natural gas in mains." President Schofield states:

"We desire to state most positively and authoritatively that the Standard Oil Company has not had in the past, nor has it at the present time, any interest whatever, either directly or indirectly, or through any person, firm, or corporation, in the Midway Gas Company, the Southern California Gas Company, or the Honolulu Consolidated Oil Company, or in any other gas, electric light, or other company furnishing gas, or electricity in Los Angeles or its vicinity."

The Associated Oil Company's Avon refinery is now in operation and is handling 10,000 barrels daily.



American Road Congress

The Third American Road Congress is now (Sept. 29), in full swing in Detroit, the beautiful Michigan metropolis, and three great problems come before it. These are: 1. To agree upon a policy of national aid to the "good roads" movement. 2. To attempt to secure legislation for the formation of an interstate commission whose business it shall be to codify, and to simplify, existing State road laws, bringing them up-to-date and making them uniform. 3. The problem of maintenance will be discussed from every standpoint, and the engineers present at the Congress will endeavor to decide proper steps to be taken in each State to insure thorough maintenance. Surely, the Congress will be thoroughly occupied!

British Process to Secure "Motor Spirit" From Coal

The London "Times" is authority for the statement that within the course of the past few weeks the Petrol Substitutes Joint Committee, which is composed of representatives from the Royal Automobile Club, the Automobile Association and Motor Union, and the Society of Motor Manufacturers and Traders, has discovered a process, by means of which it is hoped that fully 40,000,000 gallons of British motor spirit will be available annually, without further depletion of the country's mineral resources. The spirit is said to be got from coal.

Excellent results, the committee state, have been obtained from a small demonstration plant, and it is confidently hoped that the full-sized commercial plant now in course of building will be equally successful.

The annual consumption of motor spirit in Great Britain is now estimated at about 100,000,000 gallons, so that if expectations are realized a very considerable proportion of the demand should be met from the new source, and the "Times" believes that the new process will "render Great Britain partially independent of foreign supplies." Continuing the "Times" goes on to say:

"The substitute involves the utilization of a by-product of coal hitherto unsuitable for motor fuel. Mr. Stenson Cooke, secretary of the Petrol Substitutes Committee, states that he is unable to give details, though the idea of applying the process to the particular substance emanated from the committee. The fullest investigations have been made by experts, and the results are excellent. The process has been watched from start to finish, and final judgment is only postponed until it has been triumphantly demonstrated in a full-sized plant, which will only need duplication in order to produce from 40,000,000 to 50,000,000 gallons of the spirit annually. A full-sized commercial plant is now in course of building and if the experiments made there are successful—as the committee confidently hope they will be—the plant will be duplicated.

"The motor fuel produced from the demonstration plant appears in every way to answer the requirements of the modern engine, and it is said to give from 10 per cent. to 15 per cent. extra power as compared with

the ordinary marketable petrol. The cost will certainly be lower than the present price of petrol, and it will be equal to the best quality petrol. Within six weeks the committee hope to have full knowledge of the commercial possibilities."

Eminent Engineers Form Partnership

Messrs. Arthur H. Blanchard, M. Am. Soc. C. E., Consulting Highway Engineer and Professor in charge of the Graduate Course in Highway Engineering at Columbia University, and Prevost Hubbard, Assoc. Am. Soc. C. E., Consulting Chemist, in charge of the Division of Roads and Pavements, The Institute of Industrial Research of Washington, and lecturer in Highway Engineering Chemistry in Columbia University, have formed a partnership under the firm name of Blanchard & Hubbard, Highway Efficiency Experts, with offices at Broadway and 117th Street, New York City. At present Messrs. Blanchard & Hubbard are retained by Commissioner John H. Delaney as the Advisory Highway Board for the New York State Department of Efficiency and Economy.

Technical Notes

An excellent discussion of the "Manufacture of Oil Gas" was read at the twenty-first annual convention of the Pacific Coast Gas Association by L. B. Jones. This interesting and valuable paper was published by the enterprising Journal of Electricity, Power and Gas in their issue of September 27.

The Geological Survey has issued a brief report on the oil and gas developments near Green River, Grand County, Utah, covering an examination by a Survey representative of 300 square miles. The district is not very favorably reported upon, no anticlines or domes where oil might be stored having been found by the Government geologists.

The U. S. Department of Agriculture has issued a thorough treatise on the subject of "Vitrified Brick as a Paving Material for Public Roads," the same being "Bulletin 23." This book will be of value to the paving industry in general and should be studied by makers of road asphaltums, macadam pavements, etc., to give them relative ideas of costs and other matters of considerable interest to any community considering pavements.

A Diesel Locomotive

A locomotive deriving its power from a Diesel engine is now operating in Germany over the Prussian Hessian State Railways! A full description of this locomotive, which was built for fast express train service on the Berlin-Magdeburg trunk line, may be found in the September 20th issue of the Scientific American. We have not space to describe this wonderful adaptation of the Diesel engine, but it appears to us that its success ushers in an event nothing short of epochal.

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The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

Readers of the California Derrick

We ask you to remember that the Derrick is the one influential oil publication of California **not affiliated with any oil company or companies, or organizations**; that we are independent of any dictation from any organization and that our efforts are always to give to you, our readers, the best, most unbiased and most reliable information in our power to secure. While our resources are not great enough to permit us to come out as often as our contemporaries, we believe that the care with which this paper is gotten together, and the matter selected, make it intrinsically fully as valuable, if not more so, to those financially interested in the California Oil Industry.

* * * *

Organization of American Petroleum Society

The "American Petroleum Society" was organized September 10th at Pittsburg, at the Experiment Station of the U. S. Bureau of Mines, located there. The Society has as its object the study of all phases of natural gases and petroleum, including "the origin, statistics, conservation, drilling methods, production, transportation, storage, refining and specifications for refined products—surely an unlimited field. The waste of natural gas and crude oil by bungling methods will receive special attention. Thirty-two great societies interested in the subject were invited to cooperate in the organization of the new society. In fact, almost every petroleum element is represented with the exception of the Standard Oil interests. C. D. Chamberlin, of the National Petroleum Association, Cleveland, is president. Ralph Arnold and G. M. Swindell, of Los Angeles, and Professor Edmond O'Neil, of the University of California, are the Californians elected to serve on the executive committee. It is expected that the first annual meeting will be held next spring, and the second annual meeting will take place here in San Francisco in 1915, when all of the petroleum societies in the country will meet in one great congress where the most valuable articles

treating with petroleum and affiliated subjects ever presented will be read and discussed. Surely this is a long needed organization and one that has a splendid future before it. We wish it all success.

Further information about the American Petroleum Society will be presented by the Bureau of Mines in the early future.

* * * *

Idle Wells All Heavy Producers

According to our estimate there are at present between 550 and 600 idle producing wells in the State, and as far as can be determined, all of them are producers of heavy grade oil. The fact that there is such a large number of idle wells might seem to imply that we are to have low prices for a long time to come, but such does not appear reasonable when the matter is looked into. One does not need to go far to find the reasons. The oil produced by these wells is fuel oil. There is plenty of fuel oil on hand and in sight at present and refining oil is what the big refiners are anxious to get, since they not only get the lighter content from the higher grade oils, but get fuel oil as well. Hence they are anxious to pay the better prices for the higher grade oils, since the bigger money is in these. Temporarily this has cut out a large number of the lower gravity oil producers from their market and it appears that they will not be called upon until the fuel oil market demands their product. At present, production and consumption are running neck and neck, with both steadily on the increase. This cannot last forever because the production limit will in due time be reached, whereas the consumption will steadily increase just as it has everywhere else. When the consumption begins to seriously overlap production and stocks begin to be depleted, which is unquestionably at no very distant date, the lower grade producer who is now begging to sell his oil will have the buyers begging him for it. Of course, there is a possibility of sufficient light oil being obtained to keep this heavy product off the market until the Atlantic trade comes for it through the Panama Canal, but this can in no wise be looked upon as a reason for disturbing present prices, but rather a reason for their being raised, if it is all the "big fellows" can do to get enough light gravity oil to keep even with their trade. On the other hand, if the low grade producer finds a market for his oil and can supply the same by using the pipe lines, he will benefit not only himself but the marketers as well, since every barrel of oil used is an argument for the further use of the product. The wider the market the greater the return should be.

The present outlook is very hopeful for every class of oil, in spite of production's present lead over consumption, sporadic spouters and present low prices. The outlook for the producer of "high gravity" is excellent.

Sport for the Doctors

In the Dutch East Indies the plague is now being successfully fought by a concoction of soap and petroleum, which kills the plague bacilla on the fleas on the rats! While it is interesting, indeed, to know that oil is so valuable for this use we venture to say it must be even more interesting to see the doctors chasing the rats to apply the dope on the fleas!

October 10 is the day that brings the waters of the Pacific and Atlantic Oceans together, 400 years after the discovery of the Pacific by Balboa. With the opening of the Canal, the oil industry of California will find a world market. A year from this date will see a tremendous activity in California fields—in fact the extra activity has already begun. Surely, October 10 is a date of paramount interest to oil men!

* * * *

The Agency-Associated contract expired September 27. As far as we know there was no disposition on the part of either party to renew the contract. "Nuff sed."

* * * *

The call for the last issue of the Derrick exhausted our first edition the second day after publishing and we therefore published a second edition of 500 copies, all of which were purchased. This shows that the Derrick is pretty well appreciated. Advertisers take note! * * * *

* * * *

Big Suit Is On

The Government's suit in the U. S. Court of Appeals in Denver, Colorado, to regain title to the 160 acres of oil lands now in possession of the Midwest Oil Company, of Casper, Wyoming, which property was settled upon after President Taft's withdrawal of September 27, 1909, it being a parcel of the withdrawn acreage, came up for hearing on September 30. An imposing array of legal talent is gathered at the scene of battle, because the decision in this case decides the validity of the first withdrawal act of President Taft; and on that one point rests the title to all oil lands settled upon after the President's order. Many thousands of acres in California, as well as Wyoming, are therefore involved, the Naval Petroleum Reserves being in withdrawn territory. Altogether 5,041,000 acres were withdrawn by the President. Between the first and second withdrawal orders many corporations and individuals located upon various parcels of the withdrawn acreage, some of the richest tracts of oil land in California and Wyoming being occupied and developed. The Midwest Oil Company got possession of one of these tracts, the 160 acres under litigation.

The Government instituted suit before Federal Judge Riner at Cheyenne, Wyoming. Judge Riner held that the title was vested in the Midwest Oil Company, whereupon the Government appealed and the present hearing is the first since the institution of the second case.

The fact that the President, himself, was uncertain of his power, although he was (and is) one of the foremost jurists in America, makes the case look very uncertain. If the Government wins, it wins a tremendous victory, while if it loses, the individual operators and companies are proportionately enriched.

Unquestionably, whoever wins the present suit, the case will be carried into the Supreme Court, since the value of the Government lands is estimated at a half billion of dollars, while the Midwest considers its property worth several million dollars, which is well worth fighting for in the very last court of appeal.

America's Exports

Exports of California Oil During Month of August

Following are the export figures showing the quantity of oils shipped from the two California customs districts during August:

Class of Oil	Gallons	Dollars
Crude:—		
Southern California	350	21
Illuminating:—		
San Francisco	6,287,735	295,293
Southern California	1,810	298
Lubricating and Paraffin:—		
San Francisco	42,891	10,593
Southern California	3,994	364
Napthas, Gasoline, Etc.:—		
San Francisco	58,337	8,359
Southern California	4,615	442
Residuum, Gas Oil and Fuel Oil, Etc.:—		
San Francisco	17,523,728	296,814
Southern California	38,565	689

Totals	23,962,025	\$612,873
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The July shipments were nearly one-third larger than those for August, as were the July returns. The bulk figures for July, which was the record month of the year, were as follows: Shipped, July, 32,496,141; price received, \$939,307. A glance at page 9, last issue, will give the details.

America's Enormous Exports

Close to \$100,000,000 worth of all classes of mineral oils have been exported from the United States thus far this year—that is, up to September 1st. The greatest exportation, both as regards quantity and price received was of illuminants, which for the eight months totalled 695,434,251 gallons, a gain of 35,000,000 gallons over last year. The returns were commensurately larger, increasing from \$40,141,387 to \$45,295,572. There was a decline in the shipments of lubricating from 143,051,478 gallons in 1912 to 134,743,556 gallons this year; but the returns were very much better, rising from \$18,506,693, in 1912, to \$19,241,066 the same period this year. The gallonage of naphthas shipped thus far this year totals 117,244,022, as compared with 124,914,947 gallons shipped during the corresponding period in 1912. This probably reflects the home demand for automobiles of all descriptions, as there has been a great shortage in the East, compared with the usual. But the returns were increased almost \$5,000,000—showing the material gains made by prices. The gross receipts for the respective periods were: 1912, \$12,686,031; 1913, \$17,504,918. The crude shipments increased from 117,262,354 gallons valued at \$4,135,964, for 1912, to 129,666,931 gallons valued at \$5,556,876 for the eight months just ended. The increase in residuum shipments is no less than phenomenal, and it is unquestionably mostly due to the Standard Oil Companies. The residuum exports, first eight months, 1912, totalled 152,307,412 gallons, valued at \$3,710,885; while for the eight months ended same totalled 237,363,776 gallons, valued at \$5,948,812.

It will thus be seen that 1913 is in process of becoming a "record breaker."

Interesting Developments of Recent Date

The American Union Oil & Refining Company, Tulare has voted to increase its capital stock from \$35,000 to \$100,000, thus providing for additional facilities to handle the trade. The company has thus far used the Trumble refining process.

California Petroleum, holding company of the shares of the American Oilfields and American Petroleum companies (the Doheny-Confield Companies) declared its regular quarterly dividend on the Preferred shares, but passed the Common stock $1\frac{1}{4}$ per cent payment. Cost of development is assigned as the reason by the management. The company's annual production is at the rate of about 5,700,000 barrels.

The Agency's July price to members was 36 cents per barrel. As producers in shallow fields produce for as low (in rare instances) as ten cents per barrel, there is considerable profit to some of the Agency members. To those whose production cost is as high as 36 cents, however, the return cannot be very encouraging.

Owing to the terms not being "sufficiently advantageous" the Kern River Oilfields of California, Ltd., and its subsidiary, the St. Helen's Petroleum Co., have not been sold to the Shell-Dutch Syndicate. Deal is off.

Wm. Plotts of Whittier, California, who owns several large tracts of land near Barranquilla, Colombia, has made all preparations for an active drilling campaign, the first step being the construction of a good road from the highways to his property. Mr. Plotts described Colombian conditions in a careful article published in this paper several years ago.

The Midway Northern Oil Company will pay one per cent dividend on its outstanding stock October 15, the total amounting to \$7,500.

The Geological Survey states that the coal mining industry of Washington has "suffered considerably during the last few years from the competition of fuel oil from California," citing that the railroads and steamships have abandoned their own coal mines to burn our fuel. The Survey states that: "The consumption of California oil for fuel in 1912 was approximately 75,000,000 barrels, equivalent to about five times the total production of coal in the Pacific Coast States. It is estimated that the consumption of fuel oil in markets tributary to the coal mines of Washington displaced about 25,000,000 tons of coal. The railroads alone used 3,500,000 barrels of oil, equivalent to 1,000,000 tons of coal, or more than a third of the coal production of the State in 1912." It is a noteworthy fact that 75,000,000 out of 90,000,000 barrels of oil used for fuel! Grasp it!

California's Mineral Wealth in 1912

The Geological Survey gives the value of the combined mine production of gold, silver, copper and lead in California in 1912, as \$26,383,946. Of this amount gold totalled \$19,713,478.

The California State Mining Bureau, using the gold figure of the Geological Survey, gives the total value of raw mineral products as \$91,472,385,—the greatest in the history of the State. Of this vast sum petroleum leads over all other sources of mineral wealth by more than \$22,000,000. The total value of the crude oil production last year, as computed by the Mining Bureau, was \$41,868,344.

F. McN. Hamilton, State Mineralogist, deserves much credit for compiling his figures this early; it's a mighty big task.

Geological Survey Studying California's Resources

The United States Geological Survey is investigating the rocks, minerals, ores, topography and water resources of California, largely because of the need of information for the classification of the public lands. The work being done by the Survey that is of particular interest to oil men is the "more detailed geologic mapping and study" of the oil fields and we are informed in a very recent bulletin of the Survey that the studies "will probably lead to the preparation of an economic report" on the fields. This will, unquestionably, be welcomed by oil men, since the developments lately have been so rapid that there is need of just such a work, but the earliest time that a report can be expected is possibly a year or even two years.

Secretary of Standard Oil Company Resigns

William Edwards, secretary of the Standard Oil Company of California, resigned his responsible position on the 23rd of September, after twenty-three years of continuous service in Standard Oil employment.

No successor has been chosen thus far to bear the very heavy responsibilities carried by Mr. Edwards. Mr. Edwards does not state his reason for resigning, but at the Standard offices it was stated that he was probably anxious to attend to his private interests, which are known to be large.

When the Derrick's representative saw Mr. Edwards in the lobby of the Palace Hotel, which is where the oil men "most do congregate," the latter appeared happy enough and said he was taking a vacation, which he was apparently appreciating to the fullest degree. Mr. Edwards is a youngish-looking man, very shrewd and kindly in appearance. He is in the prime of life and will probably be actively engaged in some business of his own making at no distant date. It may well be argued that Mr. Edwards is well fixed, else he would not have left so responsible and doubtless lucrative position as he had already attained. There is much speculation as to whom the Standard will select to fill his place.

Company and Field Reports

Coalinga Notes

Condensed from Guy H. Salisbury's Special Report

Status of W. K. & Turner "Sale"

The report is current in Coalinga that the W. K. and Turner properties have **not** been sold to the Dutch Shell Company as scheduled. It is said that the latter people did not want to put up enough cash.

Activity on "Limited" Property

The Cal. Oilfields, Ltd., now controlled by the Dutch-Shell people, is very active indeed. A tremendous amount of lumber, rig timbers, etc., is being carried out to the company's holdings. A production "campaign" is evidently to be inaugurated in the near future. The southeast quarter of 24, 19-15 has been purchased by the Balfour-Guthrie Company, presumably for the Oilfields, Ltd. The latter company is to build a pipe line to the Coast, it is said, at an early date.

American Petroleum Co.

Well No. 36 is now on the beam making 200 barrels per day. No. 48, just completed, making 250 per day. On Section 30, 20-15, the company has eighteen completed wells. A great deal of new work is likely to be done in the near future.

Spokane-Coalinga Reorganized

The above company has been reorganized with H. H. Phipps of Spokane, Washington, as president; Dr. Harvey Smith, vice-president; R. T. Delworth, secretary; E. H. Averill, treasurer and C. M. Allen, manager in the field. In addition to the 40 acres on Section 2, 21-14, the company has leases on about 5000 acres of located prospective lands.

Turner oil has started No. 8 and is preparing to drill No. 9. No. 5, the gusher, is making 1300 barrels daily, and No. 6 making 34,500 barrels per month, or over a thousand per day. Gravity, 30.3 degrees.

Bohemian Oil Company is reported to have a fine "live" oil sand 30 feet in thickness at 3735 feet.

Crete Petroleum is re-drilling its No. 1 well on Section 30, 20-15.

Well No. 4 on the Standard's Sontag lease is now in the oil sand at 3600 feet.

Premier Oil has re-drilled No. 2 (Section 24, 20-14) to 1300 feet, with 6¼-inch casing. No. 18, now drilling, is 700 feet down, 12½-inch casing.

Canadian-Coalinga, Section 8, 21-15, has re-drilled the bottom of No. 1 to 2895 feet, having penetrated 23 feet of good oil sand at that depth. The well is making 300 barrels per day on the beam.

New Bedford Consolidated, Section 6, 17-12, some 20 miles west of Mendota, has resumed operations. Present depth about 3300 feet. Will go to 3500 with 3-inch casing.

Queen Oil Company, Section 14, 20-14, will resume operations immediately.

Commercial Petroleum, Section 31, 19-15, has cemented off the water at 1500 feet. Will complete well within next 200 feet.

The Universal Oil Company, on Section 15, 26-19, is now running night and day on the first well drilling, are putting in 16-inch stovepipe casing. The location of the well is about three miles east from the Junction Station of the Producers' Pipe Line, out on the plains, the progress of this well will be of interest to the oil men generally.

On the B. I. Potter property, Section 35, 20-14, Well No. 4 encountered a tremendous gas vein at 505 feet, from which the gas continues to road. Totally unexpected, but believed a very good indication of oil.

The K. T. & O. Company has installed a gas compressor on Section 35, 19-15, and is effecting great economy thereby. The gas is used to "fire" the boilers.

Miscellaneous Notes

The Hidalgo Oil Company, recently organized with capital of \$100,000, has taken a 96-acre lease in the Simi district, Ventura County, the property lying adjacent to the Petrol Company. The company is a close corporation. Ventura County is attracting more and more attention and this is especially true of the Santa Susana district.

Ventura County Well a Gusher

The Fillmore "Herald" states that a "gusher" making between 150 and 200 barrels of oil per day has been brought in by the Calumet Oil Company on the Guiberson Ranch, which property it purchased three years ago. The well is 2100 feet deep and a tremendous gas pressure is forcing the oil through a 2-inch pipe at the rate mentioned. The gravity is said to be similar to that of the Montebello Oil Company's wells. This is the Calumet's third producer. Production from the two older wells is stated as about 130 barrels per day. Several new wells will be drilled as a result of the latest success.

French Syndicate Buys Ventura Oil Lands

The Newhall Land & Farming Company has negotiated a sale of 2400 acres of the Rancho San Francisco, lying between Pinn and Camulos, to a French syndicate, headed by Alfred Hirschi. All the necessary papers pertaining to the transfer have been placed in escrow with the Ventura Abstract Company. The price approximates over \$150,000.

As a result of the purchase the Tepusquet Oil Company has given a quit claim deed to 350 acres on which it held a lease to the Newhall Company, in order to enable it to convey a perfect title. The Tepusquet Company will realize in the neighborhood of \$40,000 as its share in the deal. It has a well nearly completed that promised to be a good producer, which, of course, entered into consideration. The new owner intends to operate on an extensive scale.

THE STOCK MARKET

Following are the latest San Francisco quotations:

Company—	Bid.	Asked.
Amalgamated Oil	85.00	86.00
Associated Oil Stock	41.75	42.00
Caribou .....		.96
Claremont .....		.54
Midway Premier .....	.21	.90
National Pacific .....		.05
Palmer Union .....	.02	
Pyramid .....	.04	
Republic .....	.10	
Shawmut .....		.50
Sovereign .....	.08	.12
S. W. & B. ....	.10	.13
Sterling		1.00
Sunset Monarch		1.00
Turner	2.20	
Storage Certificates .....	.29	

The shortness of the list of those quoted is sufficient indication of the lack of interest in oil share trading in this city at present.

Los Angeles Quotations

As usual, oil is much livelier in our Southern metropolis than it is up here. In fact, about four-fifths of the stock exchange business in Los Angeles at the present time is in oil shares. The list following shows the active interest taken in all kinds of companies, from par value 10 cents to par value \$100. However, it will be noticed that West Coast Oil is the only \$100 stock quoted above par, when a year ago it was way below, while Union, United Petroleum and Union Provident were the stars that lit the high places. Thus are the mighty fallen.

Following is the list:

Company—	Bid.	Asked.
Amalgamated Oil	79.62½	81.00
Associated Oil	42.12½	42.50
Calif. Midway Oil Co. ....	.10½	.11
Columbia .....	.70	.82½
Continental Oil .....		.30
Enos Oil Co. ....		.05
Euclid Oil Co. ....		.10
Fullerton Oil	1.50	3.00
Jade Oil Co. ....	.03	
Maricopa Northern .....	.145½	.15
Maricopa Queen Co. ....		.50
Mascot Oil Co. ....		.47
Mexican Pet., Ltd., "Pfd." ..	80.00	90.00
Midway Northern .....	.49½	.92
National Pacific Oil Co. ....	.07½	.075½
New Pennsylv. Pet. Co. ....		.50
Olinda Land Co. (Oil) .....	.28½	
Penn. Midway Oil Co. ....	.07½	
Piru Oil & L. Co. ....	.20	
Rice Ranch Oil Co.	1.05	1.15
Union	60.00	
Union Provident Co.	71.12½	
United Petroleum	71.00	
United Oil Co. ....	.16½	
West Coast Oil Pfd.	98.00	103.00
Western Union	65.00	100.00

August Dividends

Dividends paid by California oil companies in August amounted to only \$222,775.96. This is the lowest monthly dividend aggregate of which we have any record. No quarterly payments were made during August and the Union, Union Provident, United Petroleum and other big companies that formerly disbursed regularly every month are now off the list, as are a very large number of smaller companies whose monthly disbursements went to swell a total that was well above a million dollars many months. The big companies are doing the paying, quarterly, at the present time. Almost all of the Agency companies have ceased dividend payments. As September is a quarterly month, we expect to see disbursements close to, if not in excess of \$1,750,000. The Standard will pay \$1,125,000 alone, and the Producers Transportation Company will add to this \$105,000, while the quarterly payments of the Central, Fullerton, Columbia Consolidated and many other companies that have declared this month, in addition to those which paid in August, will bring the grand total up to a sum of the figure mentioned if not nearer \$2,000,000.

In the last issue we noted the fact that Caribou Oil was again paying one per cent monthly. They have increased payments now to one and one-half per cent. A great old company.

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The Petroleum Industry in 1912

By Dr. David T. Day

(From The United States Geological Survey's Annual Report, Just Issued)

General Conditions

The production of 1911 was equaled and passed in 1912 when the total in barrels reached 222,113,218 (or 29,615,096 metric tons) compared with 220,449,391 barrels in 1911. Higher prices were the rule in 1912, except in California, and even in that State there was no considerable decline. The average price per barrel in 1912 was nearly 74 cents as against nearly 61 cents in 1911. The total value therefore increased markedly, reaching \$163,802,334, or 22.20 per cent above the value for the previous year.

In order to appreciate the magnitude of the present oil production it should be noted that it required 24 years after the beginning of the industry in 1859 to produce as much oil as one year's present output; and the output of only the last 8 years equals all produced before. The output of the United States in 1912 was greater than that of all other countries by 72 per cent, being 63.25 per cent of the world's product.

In order that the official statistics here presented may be intelligently compared with those published by other authorities, it should be noted that the production given for the year includes pipeline runs, plus independent railroad shipments, plus oil piped direct to refineries, and the crude oil consumed as fuel in oil production. The production does not include stocks in the field which have not been sold.

The greatest increase in quantity was in California where the total advanced from 81,134,391 barrels to 86,450,767 barrels, a gain in that State alone of 5,316,376 barrels, or 6.55 per cent. Wyoming showed a remarkable gain from 186,695 barrels to 1,572,306 barrels, or 742 per cent, due to the increased activity of the Mid-West Oil Co. and the Wyoming Oil Fields Co. Operations in north Texas also more than offset the usual decline in the Gulf region and resulted in a significant gain for the State.

Increased Exports

The volume of crude oil and of the usual products exported from the United States increased, owing to foreign conditions being much more favorable to American exporters. Meanwhile importation of gasoline from the East Indies was a favorable element in relieving the growing demand for this product on the Pacific Coast.

Decreased Stocks

The improved export conditions and the increased capacity of the refiners to take care of the great yield of crude oil resulted in a marked decline in stocks in all fields except California, and even there the storage of petroleum was checked by expanded consumption.

The total stocks of all crude oils aggregated 137,000,000 barrels at the beginning of 1912; by the close of the year this total had declined to 123,000,000 barrels, or a decrease of about 10 per cent. The principal decline was in the fields east of the Rocky Mountains. On January 1, 1912,

these stocks aggregated 94,000,000 barrels; they declined during the year to 79,000,000 barrels, or a decrease of about 16 per cent.

This decline at once brought out a noteworthy stimulation of prices all over the East, thus increasing the activity in drilling. Its effect was marked; so much so that the natural decline of the older fields was partly checked. Even Ohio showed a slight increase in production in 1912, the first time in 12 years.

The Oil Outlook

Present conditions of production indicate a somewhat increased production during the current year, 1913. This increase will come chiefly in California and in other States from the stimulus of higher prices especially in the Mid-Continent field. The production of California will undoubtedly become a more significant element in the general petroleum industry with the opening of the Panama Canal, until, at least, the consumption in California outstrips production. It is not improbable that the flow of fuel oil through the pipe line alongside the Panama Canal may eventually be reversed, because fuel oil is so essential to the industrial development of the west coast, and because it may become possible in the very near future, to supply very large quantities of low priced oil from the Mexican fields. Importations from that country of low-grade oils are already tending to offset the exports from the United States of high grade products. The imports of gasoline from the Far East being considered, it is probable that the net amount of gasoline exported will rapidly decline, while the exports of lamp oils and lubricants will increase. The great economic change in oil consumption affected by the development of gasoline engines calls attention to the possibility of other great variations in consumption of petroleum products. Lubricating oils can only show a gradual extension with the increased use of power of all kinds. Similarly the use of kerosene in lamps is not likely to show the sudden development observed in the gasoline trade. Nevertheless, the great discrepancy must be noted between the per capita consumption of illuminating oil in various countries. It might be expected that the advent of gas and electricity would check the use of lamps. The contrary is the case. But the change is slight compared to the great significant difference in the per capita consumption of oil for light in various countries. In spite of the development of gas and electricity in the United States, this country leads in consumption of oil for light, using about 25 gallons of kerosene per capita per year. Other countries range in this consumption as low as to a tenth of this quantity. Besides the efforts to increase the use of artificial light as an outlet for oil, the effort to disseminate literature of all kinds in all countries will tend to increase the per capita use of oil; for example, China, with its great population, is in the class of very small consumption, and a slight increase there in literacy may rival the automobile in improving the oil market.

Rank of States

As forecasted in the report for 1911 there was no change in the rank among the three great producing States—California, Oklahoma, and Illinois. These three furnished over three-fourths of the production. Among the other States, West Virginia displaced Louisiana as fourth; Texas advanced from sixth to fifth place and its former position was taken by Louisiana; Kansas advanced to ninth place and Wyoming to tenth, preceding Indiana, New York, Kentucky, and Colorado. Wyoming produced more oil than New York, Kentucky, and Colorado taken together.

Total Quantity and Value of Petroleum Produced in United States in 1912, and Average Price Per Barrel In Each State

State	Quantity	Value	Average Price per Barrel
California	86,450,767	\$ 39,213,588	\$0.454
Colorado	206,052	199,661	.973
Illinois	28,601,308	21,332,605	.851
Indiana	970,009	885,975	.913
Kansas	1,592,796	1,095,698	.688
Kentucky	484,368	424,842	.877
Louisiana	9,263,439	7,023,827	.758
Michigan	a	a	
New York	874,128	1,401,880	1.604
Ohio	b 8,969,007	b 12,085,998	1.347
Oklahoma	51,427,071	34,672,604	.674
Pennsylvania	7,837,948	12,886,752	1.644
Texas	11,735,057	8,852,713	.754
Wyoming	1,572,306	789,470	.507
West Virginia	12,128,962	19,927,721	1.643
Total	222,113,218	\$163,802,334	.737

a—Included Ohio. b—Includes Michigan.

NOTE—California's output increased 6.55 per cent in 1912 over the record output of 1911. The increase in production was twice the gain of any other oil producing State in the Union, but Wyoming's increase was the most remarkable of any, the gain being no less than 742.18 per cent.

Production of United States, 1859-1912

America's—The United States of America's total production from 1859 to Jan. 1, 1913, is placed by the Geological Survey as 2,820,426,549 barrels, having a total value of \$2,338,032,130 at the well. This is shown in a remarkable table on pages 12 and 13 of Dr. Day's bulletin.

Stocks

Total stocks in the United States decreased from 137,232,998 barrels at the close of the year 1911 to 122,869,702 barrels at the end of 1912. The only material increase was in stocks in California. The decline was greatest for Illinois oil, not only the supply held by the eastern pipe lines decreasing, but also that held in storage within the State. Mid-Continent oil also showed considerable decrease. The next largest decline was in Louisiana oil. The total storage decline amounted to 14,363,296 barrels. California is credited with a storage increase of 3,312,274 barrels.

Fuel Oils

Of the total production of 22,113,218 barrels of crude petroleum produced in the United States in 1912 about 85,000,000 barrels, or over one-third, was burned as fuel for power purposes. This includes deliveries by pipe lines of 58,560,039 barrels of crude oil, crude oil consumed in the field, and some manufactured fuel oils.

Railroads

Exact statistics of consumption of fuel oil are obtainable only for the quantity used by railroads, which amounted to 33,605,598 barrels in 1912, an increase over the 29,748,845 barrels used in 1911 of nearly 13 per cent. The number of miles of railroad operated by the use of oil declined from 30,039 miles to 28,451 miles. The total mileage, however, made by oil-burning engines increased—in other words, more trains were run on less track. In 1906 the number of miles made for each barrel of oil consumed was 3.93. This figure has declined almost continuously since then till in 1912 only 3.61 miles per barrel was the result. It is not necessary to assume that this anomalous result is due to poorer quality of fuel oil or to

less careful use or to any other form of decreased efficiency. The more probable reason is the introduction of heavier steel freight and passenger cars. A really accurate comparison in the future must consider the ton-mile.

The decrease in number of miles operated by oil is due to the return of a few railroads to coal. On one road this was due to the partial exhaustion of oil fields adjacent to the portion of the line which went back to coal. On another road, the change is attributed solely to the increased cost of fuel oil. The change back to coal will be still more evident in 1913, as increasing prices for oil offset its advantages as a fuel.

Manufactures

Oil consumption in the production of power for industrial purposes increased so considerably that there was very little addition to the stock. It is estimated that 65,000,000 barrels were used in California last year for fuel by railroads and for industrial purposes. This use will undoubtedly spread to other parts of the United States when the popularity of internal-combustion engines burning heavy oils becomes established. The increased facility of transportation of oils from Mexico should be shown by an increase in the consumption of fuel oil in the East in 1911.

Oil For Water Navigation

The west coast has adopted oil almost exclusively for vessels of the coastwise trade, and this use may be expected to extend to the east coast with the opening of the Panama Canal. The considerable use of oil for trans-Atlantic trade is improbable with the present supply.

The United States Navy has definitely abandoned the use of coal in future fighting-ship design. All new destroyers, submarines, and battleships are designed for oil burning; there are now built or building, 4 battleships, 41 destroyers, 30 submarines, 1 monitor, 3 tank ships, 1 collier, 1 submarine tender, and several tugs and small vessels burning oil exclusively. Also 8 battleships burn both coal and oil. One transport and 1 supply ship will be fitted to burn either oil or coal.

The Navy is extending its oil facilities rapidly. The President has set aside about 100 square miles of oil producing lands in the Elk Hills and Buena Vista fields of California as Navy petroleum reserves. These reserves have an estimated capacity of 250,000,000 barrels. The navy Department intends to hold this oil in the ground as an emergency supply and as a precaution against sudden decline of oil production in the United States. Tank storage is provided as follows: Boston, Mass., 36,000 barrels; Melville, R. I., 36,000 barrels; Norfolk, Va., 36,000 barrels; Charleston, S. C., 36,000 barrels; Key West, Fla., 36,000 barrels; Guantanamo, Cuba, 223,000 barrels; and Pearl Harbor, Hawaii, 200,000 barrels. Tanks will also be established at New York, San Francisco, San Diego, Puget Sound, Guam and Cavite, and the storage facilities increased to keep pace with the number of oil-burning vessels commissioned. The Navy also maintains a well-equipped fuel oil testing plant at the Philadelphia Navy Yard, where evaporative tests with various burners and boilers are conducted and where officers and enlisted men receive instruction.

During the year 1912 the Navy used 21,000,000 gallons of fuel oil, and it is estimated that the consumption for the present year will be 30,000,000 gallons.

The Navy tanker Maunee will have two 2500-horsepower dynamo Diesel engines. All submarines building are to be equipped with heavy oil engines.

The Selandia, the Eavestone, the Christian X, the Rolandseak, all heavy oil engined vessels, visited this country and aroused great interest in engineering circles. Other interesting foreign vessels of this type are the Sembilan, the Jutlandia, the Juno, the Savonia, and the Fordonian.

The ship Hagen, which has a displacement of 8350 tons and is 400 feet over all in length, recently made a trial trip in lower New York Bay. The ship is equipped with two 6-cylinder Diesel engines of two-cycle type to develop 2400 horsepower. During the test the ship ran about 11 knots.

California Oil Field

The total output increased from 81,134,391 barrels in 1911 to 86,450,767 barrels in 1912, or 6.55 per cent. Consumption, however, increased 18.8 per cent. Stocks increased from 44,240,118 barrels at the end of 1911 to 47,532,392 barrels at the end of 1912, when consumption had nearly equaled production. The average price received

was 45.4 cents per barrel in 1912, against 47.7 cents in 1911. This slight decline is to be attributed not to the statistical condition so much as to the expiration of old contracts made at the rates formerly prevailing.

The features of particular interest during the year were the development of large wells at unusual depth in La Habra Valley field, the continued development of large gushers in the valley fields, and the decline in the old Santa Maria field. Some good producers in the Midway and other valley fields were injured by an influx of water. The Coalinga territory was extended by the development of good wells to the south, and its value was enhanced by the increased utilization of natural gas, including the enterprise for piping natural gas from the valley fields to Los Angeles, and by the increased amount of gasoline obtained by compressing natural gas. Progress was also made, especially in the Midway field, in cracking crude oils to obtain greater yields of gasoline.

Among trade features of interest should be noted the purchase of 10,000,000 barrels of surplus crude oil from the independent agency of the Union Oil Co. and the withdrawal of the Standard Oil Co. from the purchase of oils heavier than 18 degrees Baume.

Acreage

The total oil acreage in California at the present time is given by the Survey as 543,828 acres, of which 334,902 acres is leased.

(To Be Continued)

Standard Oil Notes

On October 5 the Standard Oil Co.'s plant at San Diego was visited by a fire which did damage to the extent of \$50,000. Same was put out before the plant was entirely wiped out and deliveries were made the next day as usual, through the courtesy of the Independent Oil Producers Agency and Pacific Wood & Coal Company, both of which lent aid to the Standard in its difficulty.

F. H. Hillman, director of the producing department, has been elected secretary, succeeding William Edwards, who resigned September 23. A. S. Coriell, who has been with the company about a year past, at the head of the advertising department, has been chosen assistant secretary and transfer agent.

The Standard announces in its "Bulletin" that the reason for the publication of this Bulletin is due to the misrepresentation the Company has received "for many years in print and speech" which the company ascribes to its success in business. The publication of the Bulletin is to offset mislead public opinion and create in its place a favorable sentiment.

The Natural Gas Industry in 1912

The California Derrick's Review of the Geological Survey's Complete Natural Gas-Gasoline Bulletin A Great Industry Yet In Its Infancy

In "The Production of Natural Gas in 1912" by B. Hill, prepared under the supervision of Dr. David T. Day, the Geological Survey has issued a bulletin very comprehensive in scope, giving data covering not only the gas industry but the gasoline-from-gas business as well; and providing not only the facts and figures relative to production and consumption, costs and receipts in the United States, but further providing an excellent review of gas production and conditions in the countries of Canada, Galicia, Holland, Hungary, Italy, Japan, Mexico, Peru and the United Kingdom—Great Britain. All our American gas-producing states are given special attention.

In his introduction to the subject the author says: "The natural-gas industry has become one of the leading industries of the country, and to the United States belongs the credit of making natural gas a commercial product. It is the best of fuels, being cleaner, more convenient and more efficient for almost any purpose than any other fuel. Were it possible to transport natural gas as coal, petroleum or other fuels now in use are transported, it would be the leading fuel of the world and its value would probably exceed that of any commodity." He then goes on to point out the terrible waste prevalent, but sees hope in steps being taken to conserve the product in different portions of the country. He considers that the extraction of gasoline from gas is "one of the most important features of the gas industry in the year 1912," which he characterizes as a year of the greatest prosperity to the natural gas producer. Among the important features of the year past being increased production, extension of pipe lines to new communities, increased consumption and increased prices. (This latter is far the most important mat-

ter to every producer of whatsoever product.) New oil and gas pools were discovered in the attempt to get more gas, and the old gas fields were extended. The author anticipates that the year 1913 will show even greater results than 1912. Mr. Hill states that an especially interesting feature was the construction of the Midway Gas Company's line from the Buena Vista Hills to Los Angeles, but as we intend to give his California report very fully, we will not go into the matter at this point.

Natural Gas in the United States in 1912.

The total estimated consumption of natural gas in this country in 1912 is given in the Survey's Bulletin as 562,203,452,000 cubic feet, valued at \$84,563,957. This is an average price of 15.04 cents per 1000 cubic feet, a gain of 49-100 of a cent per thousand cu. ft., over the 1911 price, when 512,993,021,000 cubic feet, valued at \$74,621,534 was consumed. It will be seen that the increase in consumption was in excess of 59 billion feet, while the returns were almost \$10,000,000 greater. The "Bulletin" states that the fuel displaced in 1912 by natural gas was equal to "approximately 20,000,000 tons of coal"—a vast "displacement."

A table showing the total value of the natural gas produced in the entire country, from 1885 to 1912, gives the output of each of the gas producing states year by year, the totals being of exceeding interest in that they display the growth of this industry from the time when the total value was under \$5,000,000 to the present, when it exceeds \$84,500,000. A table showing relative outputs and consumption during 1911 and 1912 by states, affording opportunity to judge of where the growth took place and other details, is also given. A similar table, showing distribution and allied statistics, "by states" fulfills the want naturally inspired by the presentation of the first table.

Then follows a table showing distribution of gas consumed for industrial purposes in 1911 and 1912, by

(Continued on Page 13)

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

Production of Foreign Countries in 1912.

The world's total petroleum production last year amounted to 351,178,236 barrels of 42 gallons each, and of this our country produced 222,113,218 barrels, exceeding the combined production of all the other countries by almost 100,000,000 barrels; to be exact, 93,048,200 barrels. No other foreign country produced as much oil as did California alone, which produced 25 per cent of the entire world's output, and 38 per cent of the output of the United States. All this we learn from the newly issued petroleum bulletin of the United States Geological Survey, compiled by Dr. David T. Day, the most thorough, and in our opinion the best petroleum Bulletin the Survey ever issued.

Those of our readers who will take time to study that part of the bulletin which is presented in another portion of this journal will find a great deal of beneficial data and can gain a good idea of what America's petroleum wealth means to America, and of what it means to the rest of the world. The rest of the world or a large part of it—particularly the English part of it—needs our oil. They realize that need to the uttermost. If they did not, English capital would not be buying outright some of the best oil producing properties in the United States, not only in the California fields, but in the Midcontinent and Southern fields as well. The French, too, are becoming heavily interested in American oil lands; because they want a certain and not prospective production. To repeat, **not one single country in the world produced as much oil in 1912 as California!** Small wonder then, that good California oil lands are passing out of American ownership at good prices. Soon the Canal will be opened to trade—and those who cannot foresee the expansion of the California oil market coincidentally, are blind to the future. It must be, because we have the oil that other countries are in such dire need of, and to fortify themselves they are already purchasing our producing properties so that when the time has arrived when they can ship the oil directly to Europe, **they will have it to ship!**

The production of foreign countries in 1912 can be

compared with California's 86,450,767-barrel output last year by a glance at the following table, which gives the countries in the order of the size of their petroleum output:

Country	Barrels
Russia	68,019,208
Mexico	16,558,215
Romania	12,991,913
Dutch East Indies	10,845,624
Austria-Hungary	8,535,174
India	7,116,672
Peru	1,751,143
Japan	1,671,405
Germany	995,764
Canada	243,614
Italy	86,286
Other Production	250,000

Total 129,065,018

The biggest annual production the entire world ever can make appears to us at the present time to be limited to 400,000,000 barrels at the most, and with this country producing considerably more than half that amount already, the rest of the world just **MUST** come to America for oil. On the whole we find the outlook very satisfactory indeed. California prices may be low now, but they will not remain low forever—not by any manner of means.

* * * *

Removal of Gamboa Dike.

As Mr. Jack London, of Barleycorn fame, would say, the air was wine here on San Francisco bay, as far as exhilaration goes, (which is nearly always the case), when on October 10, the bands were playing, flags flying, and Joy generally was rampant, and especially rampant in Union Square, where the Mayor made a speech and several others made similar speeches, and everyone awaited word from Washington that the president had done it. Then came the word! The president had lowered his finger very firmly upon the button which sent the electric spark into the dynamite under Gamboa Dyke; and of a sudden this great mass of earth, the last barrier to actual communication between the Atlantic and Pacific, was blown high into the air. The explosion took place at exactly 2:02 p. m., October 10; and its success was exactly as anticipated; was similar to the success which has crowned the efforts of those in charge since they were placed in charge.

The oil industry can well render honor to the builders of the Panama Canal as it will be no less benefitted than other industries and will probably receive greater immediate benefits than any other California industry. For this reason the Derrick feels that this little space is due the builders and, metaphorically speaking, does them every homage. They are Creators, even as oil producers are creators; and creation is akin to the Divine.

* * * *

Dr. Rudolph Diesel

On September 30, reports appeared in the press of the world that Dr. Rudolph Diesel, the inventor of the Diesel engine, had disappeared from aboard ship while en route from Antwerp, Belgium, to Harwich, England. It was not until more than a week later that his body was found in the River Scheldt. How it came there, how the famous engineer's death came to pass, no one knows.

Dr. Diesel's invention has brought about an increase

in thermal efficiency of from 15 per cent, about the most that can be obtained from a steam engine, to as high as 48 per cent in the oil engine bearing his name. This is double the efficiency of the ordinary gas engine, treble that of the steam engine.

Better informed and higher authorities by far than the editor of the "Derrick" have written of Dr. Diesel's remarkable ability and the wonderful success that crowned his efforts. The "Derrick" only wishes to express its high regard for so great an inventor, and its regret at the untimely death of one whose name unquestionably will always rank among the highest in engineering circles.

* * * *

A Complete Petroleum Manual

F. McN. Hamilton, State Mineralogist, announces the preparation of a complete handbook on the California Oil Industry, the same to give full information upon every known occurrence of oil in the State, and data covering every branch of the oil industry. R. P. McLaughlin will have charge of this important work. The bulletin is now in course of preparation. The State Mining Bureau has just issued Bulletin 65, "Mineral Production for 1912" (California), and a very creditable bulletin it is.

* * * *

California Production for and Field Operations During September, 1913

Owing to the enormous wells brought in in the Midway field early in September, there was a surplus output of 735,061 barrels over shipments from the fields. The total production for September amounted to 8,522,280 barrels, while shipments from the fields "consumption" was below 8,000,000 barrels, exact figure, 7,787,219 barrels. The daily output in September was a few barrels less than in August; September daily production, 284,076; August daily production, 284,103. The total production to October 1st, this year, was 73,357,830 barrels. The total consumption for the same period was 72,069,182 barrels. Total surplus on hand September 30, was 47,678,299 barrels.

Forty new rigs were completed in September, as against 63 in August. Wells drilling dropped off 7—from 341 in August to 334 in September, while completions numbered 41, as compared with 50 in August. Wells abandoned in August numbered 7; 3 in Santa Maria, 2 in McKittrick, and 1 each in Kern River and Coalinga, while in September but 3 were abandoned, 1 in the Midway-Sunset and 2 in the combined Lost Hills-Belridge district. Daily average consumption totalled 259,544 barrels in September as against 274,262 barrels in August, showing quite a decline.

Following are the statistics as now given out by the Standard Oil Company:

FIELD	N. Rigs	Completed During		Production Per Day
		Drill.	Mo. Prod'g	
Kern River	5	3	1,673	28,190
McKittrick .....	..	1	269	12,136
Midway and Sunset	19	14	1,156	123,861
Lost Hills and Belridge ..	10	20	8	15,715
Coalinga	5	60	7	907
Lompoc and Santa Maria ..	12	1	221	13,475
Ventura Co., and Newhall ..	3	25	3	406
Los Angeles and Salt Lake ..	..	10	1	699
Whittier - Fullerton	3	79	3	497
Summerland .....	..	1	..	122
Watsonville .....	..	..	..	5
Salinas Valley .....	..	1	..	.....
	40	334	41	6,105
Total crude oil stocks Sept. 30, 1913,				47,678,299 bbls.
Total shipments from fields, Sept., 1913,				7,787,219 bbls.

Credit Where Credit Is Due

The Spreckels Oil Company's success in obtaining the splendid well which was credited by the newspapers to Mr. Lepper, a driller on the Spreckels lease, and to Mr. Pollak of this city, was due to the employment of Mr. Thos. Hayes, the famous well-cementing expert, acting as the company's superintendent by special arrangement. Mr. Hayes drilled the well 200 feet deeper than formerly and the entire credit for its successful handling is due to him. The well, which is known as No. 5, is now making 1950 barrels of 23 gravity oil per day, through a half-inch nozzle. There is a pressure of 550 pounds to the square inch and if allowed to flow the production would probably mount above 10,000 barrels per day. The oil is taken by the Standard at the regular price.

The attempt to discredit Mr. Hayes is, to say the least, disgusting to every fair minded person, which is the sole reason for this paragraph.

* * * *

Still Burning

The great gusher of the K. T. & O. Company, located on Section 27, 31-22, Midway, is still blazing furiously. Every effort to conquer the flames has failed. Dynamite and steam are thus far of no avail. The well, No. 21, has been afire since an hour of the time when brought in, October 18th.

Geological Survey Notes

The 1912 report on fuller's earth, by Jefferson Middleton, is now available, having been published by the Survey as an "advance chapter from 'Mineral Resources For 1912'." Fuller's earth output in the United States last year was valued at \$305,522.

California's total mineral production in 1912, according to Edw. W. Parker of the Geological Survey, was valued at \$92,837,374; of this amount petroleum represents 42 per cent as against 23 per cent for the gold output. The increase in valuation over 1911, amounts to \$2,216,730. "California is the leading petroleum and gold state, as everyone knows—in the Derrick's belief it is the leading state every other good way, this merely in passing. Copper follows gold in metal value, \$5,519,526 being last year's copper valuation. Little silver is produced, coming merely as a by-product in the copper mines. Portland cement manufacture brought over \$8,000,000 in both 1911 and 1912, while the clay products increased from \$4,915,866 in 1911 to \$5,912,450. Rock and quarry products were valued in 1912 at \$3,902,313, asphalt at \$2,186,403, borax at \$1,127,813 and natural gas at \$1,134,456.

The Geological Survey has an excellent summarizing paragraph which we herewith append to show California's mineral diversity.

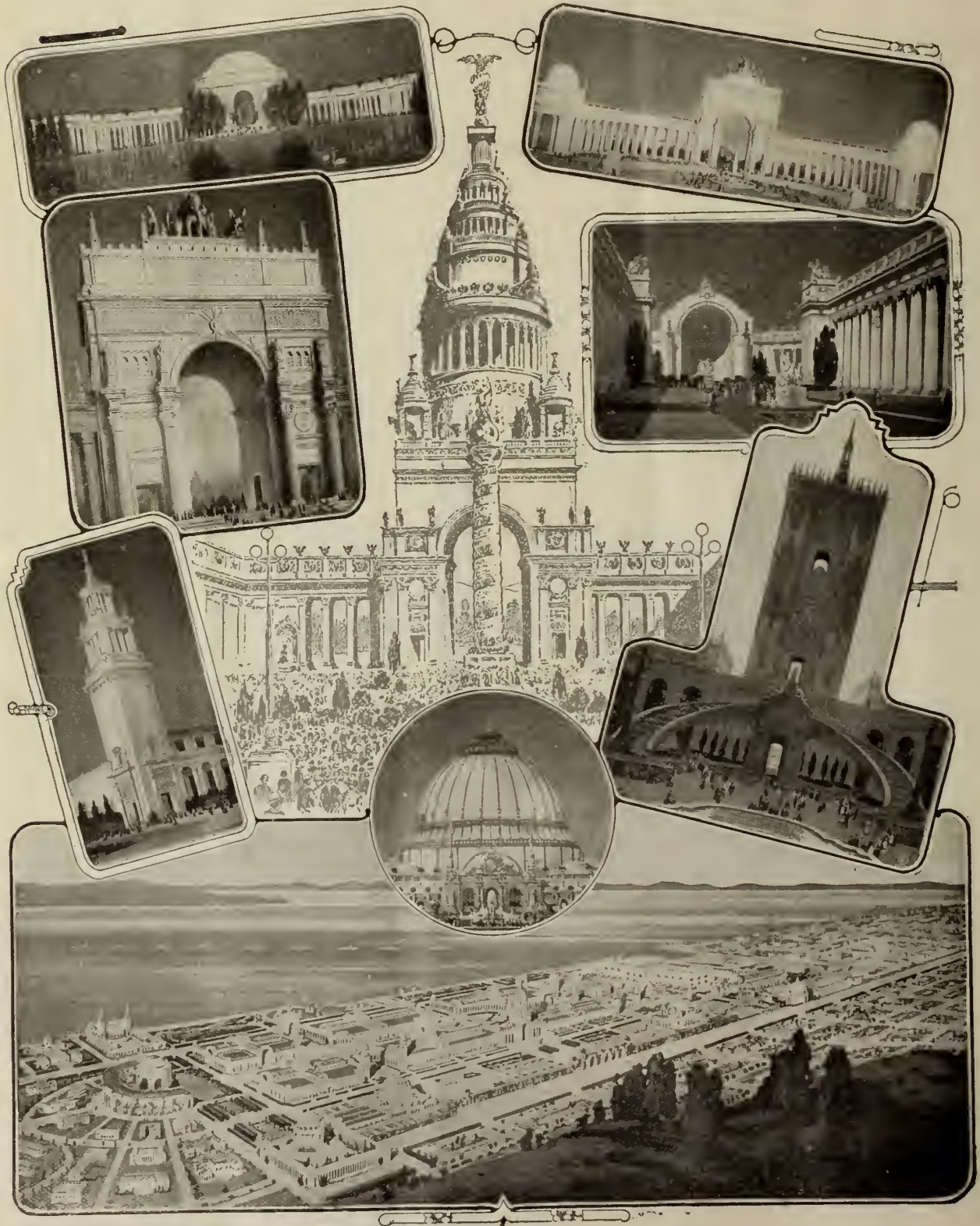
In addition to being first in the production of petroleum and gold, California is also the premier producing State in asphalt and quicksilver and enjoys a monopoly in the production of borax and magnesite, the combined value of these substances being over \$3,000,000. The other mineral products of commercial importance in California are chromite, coal, feldspar, fuller's earth, gem materials, gypsum, infusorial earth, iron ore, lime, manganese ore, mineral paints, mineral waters, platinum, pumice, pyrite, quartz (abrasive), salt, sand and gravel, sand-lime brick, sulphuric acid, talc, and tungsten (concentrates).

Little Coal and Oil Development in Alaska

Alaska coal fields continue to be undeveloped, according to the United States Geological Survey. The only coal being mined is some lignite coal taken out for local use at Cook inlet, on Seward Peninsula and at several other localities. The total production in 1912 did not exceed 10 or 200 tons.

One oil company continued operations in the Katalla petroleum field in 1912, as in 1911. One of the two producing wells is said to have been sunk to a depth of about 800 feet. The oil is produced by pumping and is refined in a small plant located near Katalla, and the gasoline finds a ready sale in the coastal settlements of this part of Alaska. There are several other oil companies which control property in this field, but these seem to have done little in the way of development during 1912.

Views of the Palaces by the Golden Gate as They Will Appear When the Exposition is Opened



The group of beautiful views presented above gives some little idea of the magnificence and costliness of the whole Exposition. The lower tower shows the "layout" of the grounds beside the Golden Gate.

r in 1915, When the



t represents an unique night illumination scheme in 1915

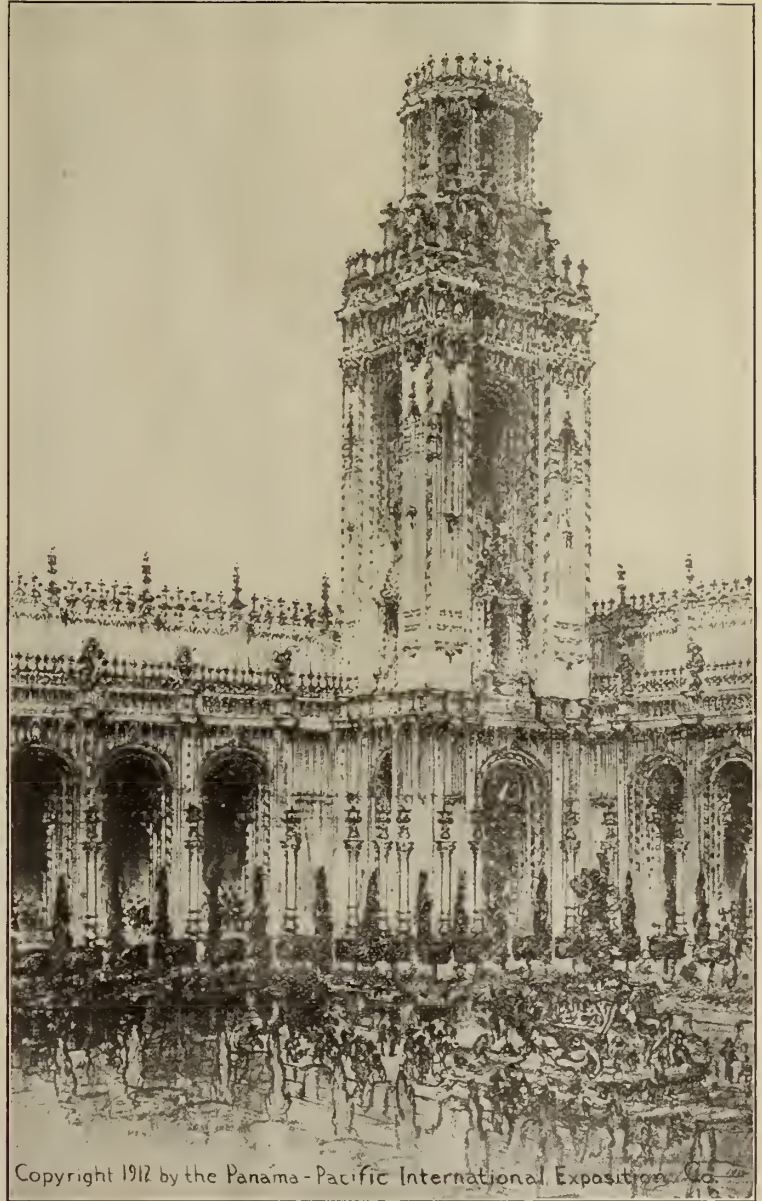


Hall" Where Great Conventions Will be Housed in 1915

re beautiful palaces and courts for the glory of every line of industry and field of endeavor, not only the Oil Industry, on which California's is most dependent.

be only partially represented by small individual county exhibits?

o to" the Fraternity themselves.



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The "Court of Seasons"

"Echo Tower" in the Court of Abundance, (shown above) will be one of the most superb architectural creation of the Panama-Pacific International Exposition

Is the Oil Industry Awake to Opportunity

Interesting Developments of Recent Date

General Petroleum Finally Financed

It is officially announced for the General Petroleum Company, by A. L. Weil, acting general manager in the absence of Captain John Barneson in Europe, that a British syndicate headed by the great British shipping firm of Andrew Weir & Co., which is captained by Sir Andrew Weir, will take over the stocks and bonds of the General Petroleum Company in exchange for those of the syndicate, negotiations having been concluded only within the past several days. Should the new syndicate, the name of which is not yet announced, desire to exercise the General Petroleum's option on the Union Oil control, it may do so. The basis of exchange for shares in the new company has not yet been made known. The personnel of General Petroleum, it is announced, will be unchanged excepting the addition of a few representatives of the English Co. Andrew Weir & Co. is one of the largest shipping companies in the world, doing an enormous coal carrying trade, among other business, and the inference is that this great company sees "coal's finish" and is in the California oil business to stay. Meantime General Petroleum has financed itself. Further details will be made public later.

Dutch-Schell Purchases W. K., Turner and Mays.

Equally, if not more important than the financing of General Petroleum is the purchase by the Dutch-Schell people of the properties of the W. K., Turner and Mays Consolidated oil companies, which purchases have all been announced this past month. The "Shell-Dutch" people consist of the Royal Dutch Oil Company and the Shell Trading & Transportation Company, both of which are generally credited with being the property of the Rothschilds, or at least financed by these interests. The California subsidiary of the Shell Company is the American Gasoline Company, and it is through this company that the trade has been made. The properties of the W. K., and Turner, are located in the Coalinga East Side field, and the agreed announced price, which is to be paid both in cash and stock, is at the rate of \$7,500 per acre, a total of \$5,000,000 for the two properties, both of which are owned by practically the same interests. The deal has been consummated, without question. The Mays Consolidated deal is alleged to be at the rate of 50 cents per share, or on a basis of \$1,050,000. The Mays' properties consist of the following acreage in North Midway: 280 acres on section 28, 31-23 and 120 acres on 30, 31-23, where the company's field headquarters are located. The Company's first well was a tremendous gusher and the four others are all big producers. The shareholders of the company are reported to have confirmed the sale unanimously.

Thus there are today in California seven great interests, the Standard Oil Co., the Shell-Royal Dutch, controlled by the British, the General Petroleum, controlled now by the Weir Syndicate, the Union Oil Company, the Associated-Kern Trading & Oil, or Southern Pacific, the Santa Fe Railroads and the California Petroleum Corporation, Doheny and allied interests. As has been many times pointed out in this publication, control of the oil business in California is rapidly centering in the hands of a few great corporations, liberally provided with funds to carry on gigantic undertakings and to stand amenities like trade wars, price fluctuations and legislation.

Forfeits Great Leashold

The Santa Fe Railroad's subsidiary, Chanslor-Caufield Midway Oil Co., has forfeited its lease of the Jameson-Wrampelmeier-Strassburger property of 8000 acres, by court order in which the most scathing rebuke ever administered a corporation for crooked dealing was given to the Santa Fe people by Judge Prewitt of Placer County, before whom the case was tried. An appeal will be taken, needless to say.

* * * *

Big Expense

The Associated, in its application to the court to restrain the State Railroad Commission from enforcing the common-carrier laws, makes the claim that it will cost the company \$8,855,000 to transform its private oil lines into common carriers, stating that such action will necessitate twenty-three 55,000 barrel tanks additional to those now in use.

* * * *

Standard Will No Longer Purchase Oil From Producers Whose Lands Are in "Withdrawn" Area

The Standard Oil Company has announced, with a tone of great reluctance, that it cannot continue its purchases of oil produced from lands which are the subject of litigation with the federal government. Three ejectment suits, accompanied by an accounting for the oil extracted, were filed by the United States in January and February, 1913, and the Standard, as a purchaser of oil from the defendants in possession of the land involved, was made a defendant in each of the actions, the government demanding an accounting for the oil which the Standard purchased from the defendant companies. To keep itself in the clear and protect its shareholders the company came to the conclusion that there was but one thing to do, and that was to discontinue the purchase of oil from operators on lands to which the title is not clear, until such time as same had been definitely settled. Since President Taft's withdrawal order of September 27, 1909, the Standard has neither leased nor purchased an acre of withdrawn land which was entered after that date, nor have they themselves ever located, either directly or indirectly, a single acre within the withdrawn area, out of respect for the Presidential withdrawal, although they themselves believe the first withdrawal to have been invalid.

Combined Oil Co.

Above Company, which has recently levied assessment No. 5, with the full consent and approval of large and small shareholders alike, has just finished well No. 5 on its property in the North Midway field, at a depth of about 1200 feet, using Layne & Bowler strainer pipe. We have not yet heard the production, but infer that it is a good average producer. May obtain further data for next issue.

Ralph Arnold is now on a business trip in South America.

John D. Rockefeller is now in his 74th year.

Company and Field Reports

COALINGA

Condensed from Guy H. Salisbury's Special Report

California Oilfields, Ltd., property is not to be further developed for awhile, according to reports current in Coalinga. A number of men have been laid off and such of the producing wells as it will be safe to discontinue operating are being shut down. The inference is that not until the canal is opened and the Dutch-Shell tankers can take the product, will there be a continuance of operations, although a refinery would solve the problem. As Mr. Salisbury says, "The situation is interesting."

American Petroleum Co. is operating 27 producers and drilling 5 on sections 6, 20-15, and 32, 19-15. On sections 18 and 30, 20-15, there is no new work being done but the wells are all operating.

Future Success Oil Co., Parkfield district, has cemented well No. 1 at 1304 feet in brown shale.

Potter Property, section 35, 20-14, will spud in No. 5 early in November. The gas flow from No. 4 has greatly decreased.

Union Oil Co. will soon resume operations on La Vista well No. 4, section 4, 20-15, shut down some months back.

Home Oil Co., section 20, 19-15, lost rig No. 1 by fire a few days ago. New rig building.

Claremont Oil Co., 24, 20-14, is now completing well No. 9, recently cemented.

Marathon Oil is again in the race, well No. 1 (section 13, 25-18, Devils Den) being down 1400 feet. Well appears to be in an oil formation as there are plenty of showings, but a productive sand is not expected at less than 2300 feet.

Little Jack Oil Co., section 28, 25-18, Devils Den, is down 1900 feet. Will go as deep as 3000 feet for oil.

Spokane-Parkfield has produced some oil from its No. 1 well, which is only 105 feet deep, and is now drilling No. 3 at 480 feet.

Kings Quicksilver Mining Co. will be in full operation by February 1915, from present outlook and rate of progress.

Kern Trading & Oil Co.'s well No. 21 on section 35, 19-15, which was completed around the 10th of the month, had an initial production of 3150 barrels daily (by tank gauge), of 30.5 gravity oil. The oil is sold to the Standard at 65 cents per barrel. Net, over \$2,000 per day to K. T. O. (Southern Pacific.)

Associated Oil's well on 8, 21-15, after cleaning and a little re-drilling, is making 200 barrels daily of high grade oil.

Trader's Oil Co., section 24, 20-14, is running one string of tools on new work. Oil is being shipped regularly; production normal.

Kaweah Oil Co., on the N. W. quarter of section 30, 21-16, is reported to be preparing to drill a second hole 150 feet east from the first well, which was abandoned after reaching a depth of 3400 feet without reaching production.

California Oilfields, Ltd., has, by latest report, shut down 19 producing wells. The company's contract with the Standard expires about Nov. 15. It is anticipated that the Shell's, through the American Gasoline Co., will show their hand at no distant date.

Standard Oil on 28, 19-15, is running six strings of tools on new work, and two on old work. This is a banner producing section.

Bohemian Oil Co., section 22, 21-15, four miles south of the town of Coalinga, is now pumping 38.3 gravity oil; quantity not stated. Depth of sand, 3735 feet.

Azores Oil Co., section 26, 21-15, after reaching light oil at 4200 feet, backed up and has just cemented off the water at 4000 feet.

Zier Oil Co., section 1, 20-14, has completed well No. 18, which is making 90 barrels daily of low gravity. Production from this property is now about 9000 barrels per month.

Pyramid Oil Co.

Pyramid is operating the following properties:

120 acres in Ventura County, near Santa Paula, 3 wells, producing 40-50 barrels per day, with an average return of 55 cents per barrel received, the property returning a net revenue of approximately \$250 per month.

40-acre lease from United Oil Co. (perpetual lease), section 26, 31-22, Midway field, 2 wells, production 75 barrels per day, no further data.

100-acre lease, (perpetual), Central Midway, on which one well is just being completed and looks like an excellent prospect according to reports direct from the field. A second well has just had the 10 inch casing cemented at 1870 feet and the expectation is that it will be finished at 3100 feet. This property adjoins Standard Oil property, on which a splendid producer is located.

Nothing is being done on the 1600-acre tract; too expensive and uncertain. Company appears in best condition it ever has attained.

Statement of the Ownership, Management, Circulation, Etc., of California Derrick, published monthly at San Francisco, California, required by the Act of August 24, 1912. Editor, Charles Carroll Wright, 788 Mission Street, San Francisco, Cal.; Managing editor, same, Business Managers, same; Publisher, same. Owners: Charles Carroll Wright, sole owner.

Known bondholders, mortgagees, and other security holders holding 1 per cent or more of total—none.

CHARLES CARROLL WRIGHT,

Owner.

Sworn to and subscribed before me this 24th day of September, 1913.

EDITH W. BURNHAM,

Notary public in and for the City and County of San Francisco, State of California. My commission expires July 30, 1914.

THE STOCK MARKET

San Francisco Quotations

While not by any means doing a frantically lively business, the stock exchange here is much more animated than for some time, this due in big measure to the trading in Caribou since that company got its big well in the Midway. This stock has advanced very materially. Amalgamated is not quite in such high favor as it has been the past few months, while Associated, which is paying 3 per cent annually, is in truth a pretty low figure—\$38.50. Turner is strong at \$2.15, as is natural since the announcement of its sale to the Shell-Royal Dutch people. W. K., also sold to the coterie, is very strong—\$3.15 bid. Palmer Union is about as low as it can get, presumably due to the dissatisfied faction. Monte Cristo is by no means as strong as it might be. In the East—N. Y. Curb—Standard Oil of California is quoted at \$190-\$195. In Los Angeles, Union, Union Provident and United Petroleum still remain low. Stocks not mentioned here can be found in the lists following:

Company	Bid	Asked
Amalgamated Oil	78 00	
Associated Oil Stock	38 50	39 00
Caribou	1 40	1 50
Claremont	50	54
Coalinga Central	20	
Coalinga Mohawk	60	
Lucille	2 00	3 00
Maricopa National		12
Maricopa 36	23	30
Mascot		41
Midway Premier	10	
Monte Cristo	50	80
Oreut Oil	75	
Pacific Crude Oil	20	28
Paraffine	25	
Palmer Union	01	02
Premier		20
Republic	10	
S. W. & B.	10	
Sterling	85	1 00
Sunset March		80
Turner	2 25	
Wolverine	40	
W. K. Oil Co.	3 15	3 25

Los Angeles Quotations

Company	Bid	Asked
Amalgamated Oil	77 50	81 00
Associated Oil	38 50	38 62½
Calif. Midway Oil Co.	07	
Fullerton Oil Co.	2 10	
Globe	02½	02¾
Jade Oil Co.	06¾	07¼
Maricopa Northern	09	10¾
Maricopa Queen Oil Co.		38
Mascot Oil Co.		47
Midway Northern	28	35
National Pacific Oil Co.	05½	05¾
Olinda Land Co. (oil)	31	
Trader's Oil Co.	30 00	36 00
Union	57 00	57 50
Union Provident Co.	69 25	70 50
United Petroleum	69 00	70 00
United Oil Co.	15	15½
Western Union	65 00	

List of Recently Granted Patents

California—Los Angeles.

Pneumatic pumping apparatus, A. E. Chodsko, 1,071,878.

Well drilling tool, Ras Craig, 1,064,618.

Automatic chain tongs, Ellis Green, 1,071,908.

Deep well liner pump, E. A. Hardison, Bakersfield, and R. W. Gunn and W. A. S. Thompson, Los Angeles, 1,064,071.

Rotary drill bit, William Kammerer, 1,063,450.

Casing perforator, E. L. Mills, 1,063,277.

Sucker rod coupling, C. L. Parker, 1,064,764.

Elevator for sucker rods, C. L. Parker, 1,072,360.

Rotary Drilling apparatus, A. C. Stewart, 1,062,050.

Process of refining petroleum or similar oils and apparatus for carrying on this process, M. J. Trumble, assignor to Trumble Refining Company, 1,070,361.

Valve for well pumps, T. B. Wilkinson, 1,067,496.

Well boring apparatus, A. G. Willard, Los Angeles, and C. E. Wilcox, Bakersfield, 1,064,270.

Coalinga—

Casing elevators, (2) S. A. Guiberson, Jr., 1,073,750 and 1,073,751.

Well casing shoe, S. A. Guiberson, Jr., and Marry Mead, 1,062,647.

Tubing catcher, T. E. Dolphin Crumpton, 1,006,000.

Adjustable casing tongs, W. S. Brummett, 1,073,661.

Well casing perforator, A. C. Graham, Oilfields, (East Side, Coalinga Fields,) Cal., 1,070,336.

Miscellaneous—

Process of cleaning and refining oil, C. W. Stone, Hollywood, 1,070,555.

Method of increasing the productiveness of oil wells, I. L. Dunn, Longbeach, 1,067,868.

Well drill, F. C. Baker, Maricopa, 1,071,499.

Suction device for wells, A. E. Putnam, Redlands, 1,069,466.

Rope Clamp, R. E. Gruber, Oroville, 1,069,942.

Well drill, J. M. Currell, Paso Robles, 1,065,298.

Oakridge Oil Co., a subsidiary of the Montebello, is preparing to drill well No. 1 on the Lagomarsino ranch in Wiley Canyon. The McDonald Oil Co.'s well in Hopper Canyon has passed through "several very encouraging strata."

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PATENTS

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The Natural Gas Industry in 1912

(Continued from Page 5)

states, and another table giving the value of natural gas consumed in this country from 1907 to 1912, inclusive, by states. The combined value of natural gas and petroleum by states is given, "arranged in the order of the value of the combined production," and finally, before reviewing each state individually and at length, a last table is presented showing "the record of natural gas wells in 1912, by states," showing producers and dry wells obtained, wells abandoned and those productive December 31, 1912. The acreage controlled by natural gas companies at the end of 1912 totalled 10,407,884 acres, of which 459,089 acres was owned outright, 8,682,855 acres was leased and gas rights were secured on the remaining 1,265,940 acres going to make up the total of 10,407,884 acres chiefly valuable for their gas production.

The Derrick has not the space to review the facts and figures presented covering gas operations in the various states of this country, so will turn immediately to the California report, which we herewith give the gist of, quoting freely:

California

"The year 1912 was the greatest in the history of the natural-gas industry of California. The estimated value of the gas consumed in 1912 was \$1,134,456, as compared with \$800,714 in 1911, an increase of \$333,742. This increase was not brought about by the discovery of new fields, but by an increased production and consumption of gas from districts which came into prominence as a gas producer in 1910-1911, and which is the most productive and important gas field in California at the present time. It is located in Kern County, the source of production being the Buena Vista Hills, near Taft. Large volumes of gas accompany the oil gushers in this field, and several wells are exclusively gas producers. Some of these wells have a capacity of 50,000,000 cubic feet or more per day. Although natural gas has been produced and utilized for many years in California, it was not until the opening of this field in 1910 that this state began to assume importance as a gas producer. The field is now well developed and gives promise of an ample supply of gas. Believing this supply sufficient to justify the expenditure of building a pipe line from this field to Los Angeles to supply gas to consumers in that and other towns in Southern California, the Midway Gas Co. began in April, 1912, the construction of such a line." Here follow the full details of the line's construction, right of way, etc., most of which are known to our readers. The length of the Midway Gas Co.'s line is 117 miles and the author of the Bulletin estimates that 24,000,000 cubic feet of gas per day can easily be transported. He states also that the compressor plant being installed in the Midway field by the Company will be ready for service the latter part of 1913. He also adds:

"The building of this pipe line to conserve and supply natural gas to consumers in Southern California has been undertaken under great difficulties and at enormous expense. The enterprise ought to be appreciated by the consumers to the fullest extent." (As though CONSUMERS cared about the enterprise: what consumers always ARE looking for, is a **lower rate**.) The Bulletin gives the number of gas wells in the Midway at the end of 1912 as 15, 4 of which were completed during the year and with 3 additional drilling. He states that the wells have a rock pressure of 65 to 960 pounds, and a depth of 1,600 to 2,600 feet. The control of the gas wells is vested in the Honolulu Con-

solidated Oil Co., and the Standard Oil Co., and the product is sold to the California Natural Gas Co. Distribution is by distributing companies through arrangement.

Almost a billion feet of gas was consumed domestically here last year, the exact amount being 979,796,000 cubic feet, valued at \$525,428. The increase in domestic consumption therefore was over 400,000,000 cubic feet and the returns increased a round \$208,000. The consumption for power purposes was 8,379,632,000 cubic feet, valued at \$609,028. The California Natural Gas Industry is therefore seen to have passed the million-dollar mark as an industry, having brought \$1,134,456 for gas consumption from all sources the past year. Doubtless if the money saved in the oil fields by gas consumption could be known, the sum would be largely swelled.

Gasoline from Natural Gas

This subject is treated separately from the gas business, seven pages of the Bulletin being devoted to its discussion. The author states that although natural gas gasoline has been produced in a small way for as many as 12 years, the last immediate years have seen the development of this business into an industry, as a result of "making use of the enormous quantities of waste or 'casing head' gas from the oil wells of the country." The low price of gasoline in 1911 retarded the development of this industry he says, but the 1912 advances made it much more acceptable to economically minded operators, so many plants were installed. Following this is a little elementary discussion to the effect that not all gases will produce gasoline under compression, since there are "wet" and "dry" gases; that the wetness or reverse can be determined by chemical test, but that "the installation of a small experimental plant is a better test." At the end of 1912 there were 250 gasoline-from-gas plants in operation in 8 states. Of the different states, West Virginia leads in casing head gasoline production, Pennsylvania follows, Ohio is third, Oklahoma fourth, California fifth, then Colorado, Illinois and New York.

The quantity of gasoline thus produced in 1912 was 7,425,839 gallons valued at \$531,704. Of the total, California produced 1,040,695 gallons, valued at \$112,502, an average wholesale price of 10.8 cents per gallon, the highest average price recorded in the country. The number of gasoline-from-gas plants in successful operation at the end of 1912 was 7; these were, to quote directly, the remainder of the report: Pacific Gasoline Co., 1 plant in Brea Canyon, Orange county; Pinal-Dome Oil Co., 1 plant in Santa Maria district; Santa Barbara County; Puente Oil Co., 1 plant at Puente, Los Angeles County; Purity Gasoline Co., 2 plants in Santa Maria district, Santa Barbara County; Union Oil Co., 1 plant in Santa Maria district, Santa Barbara County; and Western Gasoline Co., 1 plant in Santa Maria district, Santa Barbara County. Two plants in California were idle all the year; that is, 1 plant of the Honolulu Consolidated Oil Co. in Kern County (which has never operated but experimentally) and 1 plant of Pinal-Dome Oil Co. in Santa Barbara County. The gasoline production of this State was very large in 1912, but several of the plants only operated a portion of the year. One plant operated but four months, another two months, one five months, one six months, and one began August 1, 1912, and continued throughout the year. With all the plants in operation the production could be very materially increased. The average yield of gas in gasoline per thousand cubic feet of gas used in 1912 was 1.7 gal-

lons per thousand cubic feet, the range being from 1 to 3 gallons per thousand cubic feet.

"It is expected that the production of gasoline from natural gas in California will continue to increase, as this State produces large quantities of gas from its oil wells in the Santa Maria field, as well as in Orange County, the gas being very rich in gasoline. It is thus seen that California is just beginning to realize the importance of her natural gas resources and that the conservation of this valuable fuel should be undertaken. The production of gasoline from the surplus gas in the oil fields of Southern California is one of the most important steps in this direction. It is reported that the gas from wells in the Midway field is of two kinds—dry gas, free from gasoline, at a depth of about 1600 feet, and wet gas, charged with gasoline, at a depth of about 2200 feet, the wet gas containing, it is said, about 2 gallons of gasoline per thousand cubic feet. No gasoline plants are in operation in the Midway field."

The Bulletin concludes with an analysis of manufactured gas and natural gas, and a list of cities in the United States supplied with the natural product.

Wm. Edwards and Associates Form Company in Texas

Wm. Edwards and brothers, and a number of other prominent California operators, have incorporated a company in Texas which is already operating, the first well being drilling at the present time. The Edwards brothers originally had 83,000 acres located in Ford and Knox counties, but this has recently been added to and the acreage held by the new company is now just about 90,000 acres. There are twenty operators interested. The name of the company has not yet reached California, as it was incorporated on October 31, and news that it had been incorporated was telegraphed, but not the name, of which several had been chosen in case there were companies already operating or in existence which might have the same name as that selected for the newly incorporated company, which would have occasioned a delay. Mr. William Edwards appears very optimistic indeed regarding the prospects for the success of the company.

General Notes

Palmer Union's well No. 11 is reported to have started flowing at the rate of 900 barrels per day—welcome news indeed to the shareholders.

Ventura Spouter—The Fillmore Herald states that the Squaw Flat Oil Co. operating in the upper Tar Creek basin, being the northernmost well in the Fillmore district, has struck a light gravity spouter, which has now (Oct. 31) been flowing several days. The well has not yet been placed on the beam so no test has been possible. There is no water in the oil, gravity of which is unstated. Union Oil Co. has a large acreage in this district.

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Standard Oil Company
(CALIFORNIA)
SAN FRANCISCO



Vol 6

San Francisco, Cal., November, 1913.

(Issued Dec. 5)

No. 4

Oil Industry's Exhibition in 1915

PLANNING OIL'S DISPLAY

Oil will be represented at the Exposition here in 1915—and well represented.

The probability is that there will be a general exhibition as well as an individual exhibition by the various companies. Plans are under way to assure an exhibit of a general character but as yet these plans are purely in the formative stage and subject to change. There is a "grasping for ideas;" a desire to work out something of benefit to all those financially interested in Oil's development. This "grasping for ideas" is not confined to individual companies by any means; the Exposition Company's petroleum representative, Dr. Chas. E. Van Barneveld, is also looking for means to portray the State's greatest Industry in a befitting manner at the West's celebration of the completion of the Panama Canal and the reconstruction of San Francisco. Dr. Van Barneveld has very recently returned from the East, where he has consulted with Dr. David T. Day, of the Geological Survey, and many others, on the subject of an exhibition worthy of the Petroleum Industry. Before December 10, Dr. Van Barneveld will meet representatives of the oil producing counties, of the great oil companies, of the Tool manufacturing companies and others prominently interested in the Oil Industry, in an effort to form an organization which will devise ways and means towards securing the most thorough and by all means best Oil Exhibition ever held. The meeting will take place in Los Angeles and its results will be duly chronicled.

General Exhibition Will Aid Every Branch of Industry

That there would be a splendid individual exhibit at the Exposition, by the Standard Oil, Union Oil, and other big refining, marketing and tool manufacturing companies, was taken for granted from the outset. The opportunity is, of course, too excellent to be missed.

But there has, until now, appeared to be little hope for a general educational display towards which all the exhibiting oil companies, counties, tool makers and allied industrial corporations should contribute. Perhaps even now there is small chance of such a display, unless individual company ambitions can be to just a little extent submerged, to make way for one grand, united ambition to glorify the Oil Industry in a general

way from which no absolutely immediate remuneration could be expected, but which WOULD PAY in the end by increasing the world's general interest in Oil.

A general display would not in the least possible degree limit the scope of the individual company exhibit; it would unquestionably broaden interest in the Oil Industry as a whole and increase the desire to see EVERY company's exhibit.

The First Appeal For a Great Petroleum Exhibition

Almost three years ago—in February, 1911—the DERRICK made its initial appeal for a great Petroleum Exhibition in 1915, being the first publication to advocate and work for an Oil Exhibition. Today the construction of the building in which the Petroleum Industry's exhibits will be housed is proceeding rapidly and a very lively interest is obtaining a fitting display, one unequalled in the history of Oil, is manifested by the Oil Fraternity as a whole. It was our hope that there would be a "Petroleum Palace," but no steps were taken by the big people of the Industry to induce the Exposition Company to construct such a building, as far as we know, so that Oil's display will be housed under the same roof as that of the Mining Industry in the "Palace of Mines and Metallurgy." There is no hint of OIL in that euphonious title—but for this the Oil Fraternity may blame themselves alone.

A Bare Idea of Oil's Importance

America's Crude Oil Production has brought over TWO AND ONE-THIRD BILLION DOLLARS AT THE WELL. Prominent oil men are now living who were born BEFORE the Oil Industry—among them John D. Rockefeller, and the famous coterie of "old" Standard Oil men many of whom are today enjoying the fruits of their labors. Yet even more noticeable is the fact that California's Oil Industry is only in its infancy, growing tremendously year by year, more than doubling the Gold output in its annual money value and being incalculably more valuable to this Coast and the world than is the yellow metal. It doesn't seem necessary to remind Oil Men of these facts—and yet they have let slip the chance to have a "Petroleum Palace" here in 1915. It is now too late to get such a building and the point the Derrick wishes to bring out

is simply this: It is NOT TOO LATE to have the greatest Oil Exhibition ever attempted, if California Oil Men WANT it, in the "Palace of Mines and Metallurgy."

Description of "Palace of Mines and Metallurgy"

This beautiful building forms the northeast facade of the "Court of Abundance" and lies directly west of the great "Machinery Hall", the largest of the Exposition "palaces." The area covered by the "Palace of Mines and Metallurgy" is 252,000 square feet, the building being 451 feet wide by 579 feet long. Its volume is 16,199,000 square feet. Its height to spring-line of dome is 110 feet; to top of dome, 160 feet. The edifice faces directly on San Francisco Bay, with beautiful gardens intervening (not yet, but as shown on the plans), the view of Mount Tamalpais and the hills of Marin County, across the water, being unobstructed from the North Wall, so that it is really in a very favorable position to command the attention of the public.

Already an excellent idea can be gained of the final shape and symmetry of the "Palace" which will house Oil's display. The speed with which it is being constructed serves as a reminder that the time for action in determining on both the general and individual corporation displays is short. The Exposition opens February 20, 1915, a bare fifteen months from the present.

Some of the Companies Already Planning to Exhibit

The Derrick, in its desire to determine the interest of the various companies which it seemed should have a natural interest in being represented at the Exposition, wrote a number of letters of inquiry on this point, and most of these letters have elicited replies showing enthusiasm for and keen interest in the Oil Exhibition. While it is too early for the companies to care to make public any of their plans, we know for a fact that the Standard Oil Company of this State, the Union Oil Company and several other companies who do not care to be mentioned until later on, will have superb displays. Fresno County will be represented by an Oil Exhibition, authority for this statement being General R. L. Peeler, of Coalinga. Outside of this State we have heard from the Union Petroleum Company of Philadelphia, and this Company "can easily be coaxed"—which is another way of saying ITS officer's eyes are not shut to the smiles of Opportunity. The great tool manufacturing companies are all interested and prospects look VERY BRIGHT for an immense exhibition of drilling machinery.

Possible Ideas to Be Carried Out in the Creation of a General Exhibition

There are an infinite number of subjects from which to choose to make a general educational petroleum display of interest alike to those in every branch of the business and to the general public. It is to be expected that the best features only will be chosen. To many no display could be more interesting than a GEOLOGICAL CROSS-SECTION of typical San Joaquin valley territory, for instance, showing every formation likely to be encountered, this cross-sectional cast to stand vertically against the wall like a huge map, a derrick in proportional size being on the "surface," at the top, and the casing shown all the way down into the oil sand. This would give the average man some slight idea of what it means to drill an oil well in Western Kern and Fresno counties, or in any deep territory. Data bearing on costs in all oil fields would impress

the public with the fact that they get their oil remarkably cheap.

The advance in drilling methods in America since the days of Col. Edwin L. Drake could be shown by duplicating his little derrick, crude tools and appliances with a modern-day 108-foot California derrick such as supports a Union Tool Rotary drilling machine and 5,000 feet of South Chester casing—or any make of casing that will "stand the gaff." Also, let this machine "make hole" through the floor of the building, or at least be operated so that the foreign operator may judge of its merits. A standard outfit could as well be displayed except that it does not represent as great a departure from Col. Drake's appliances.

Drilling Tools of All Times, from before Confucius in China, to the time of Col. Drake's well, down to the present, would prove immensely interesting as an historical feature. Tableaus might best convey the advance in methods of oil extraction. There is truly a marvellously rich historical field awaiting exploitation.

Refining Methods of the Past and of Today: What an opportunity is open in this direction! No company, in all probability, is so well equipped for this as Standard Oil. The handling of oil from the minute it is obtained until it reaches the consumer, in cans, wagons or direct by pipe-line is a worthy subject.

Proportionate Production: World's production to date, compared with America's output since Col. Drake drilled his well; world's production compared with California's since production records have been kept. Many means of getting the **proportional** idea are available, such as a very small barrel representing American production in 1859, one in proportion representing 1914's production and an enormous barrel representing America's total output to date. This is, perhaps, a crude method, and a small derrick, or mark on a 108 foot derrick could be made to indicate the earliest production as compared with the present. It is not so much the means as the idea that matters.

But, there will be no lack of ideas: the main matter now is to help Dr. Van Barneveld organize all factions of the industry into a working "committee of the whole," which will take hold and not let go until the greatest oil exhibition the world has ever known is an assured fact. To this end the California Derrick pledges its support to the extent of giving any reasonable publicity Dr. Van Barneveld may desire to aid the cause, believing in so doing it will merely maintain the "forward marching" policy it has always been our endeavor to pursue. We feel certain all the oil publications in and out of the State will gladly extend the courtesy of THEIR space also.

Texas Petroleum Company is the name of the corporation organized by the Edwards Brothers, William and Cyrus, together with Fred V. Gordon, John M. Wright, J. M. Laymance and a number of other prominent California operators to develop the Edwards Bros. holdings of 90,000 acres in Ford and Knox counties, Texas. The first well is going down fast, being now about 900 feet or more. Oil is expected from 1800 to 2000 feet. This is a test well. David T. Day, U. S. G. S., in the bulletin covering 1912 production, stated that if the State of Texas didn't make some provision for discovering its oil, private capital, in the shape of large corporations having under control immense holdings, WOULD do so, to the loss of the public. It may not be out of the way to state here that Dr. Day is "on to his job." So are the Californian operators on to theirs.

The Settling Tank

An Engineering Problem Solved

For a long time it was a grave problem in the Mexican fields, to get the oil, once produced, to market at tidewater. The coast line afforded no suitable wharves for loading ships. Necessity, however, usually forces a way. Where the small Bay of Tuxpam bites into the land about 100 miles south of Tampico, and 150 miles north of Vera Cruz, a loading arrangement was evolved which has met with success to the fullest degree. It was quite an engineering feat. A pipe line two miles in length was prepared on the beach of the bay and hauled in its proper position in the water by several powerful tugs. To the seaward end of the pipe (which of course rests on the bottom of the bay) is attached a long flexible hose, which when not in use is attached to a strong buoy. The vessel to be loaded from this hose is hove to and securely anchored by both a bow and stern line, when the "business end" of the hose is attached to the delivery pipe leading into the hold of the vessel. A signal starts the pumps at the shore station, when there's nothing to do but wait until the tanks are filled. The deepest draft vessels can load here and the system is so popular that two additional delivery pipes are now in operation, more oil being shipped from the Tuxpam station at the beginning of 1913 than from Tampico itself.

Withdrawal of Oil Lands continues, the President having authorized another, this time amounting to 45,720 acres, covering 2000 acres in the south Sunset and 44,000 odd acres in Belridge-Lost Hills. Cuyama Valley will be the scene of the next withdrawal, since oil seeps have been discovered there and an abundance of claims have been filed. Government classifying agents, however, eager to save the property from the marauding hands of the discoverers, are now on hand and a withdrawal order is soon expected.

Canada: Canadian Pacific Ry, has 40 oil-burning engines on its western division and is erecting oil tanks for supplies at suitable points. C. P. R. runs through the world's greatest unmined coal supply. All dredges and tugs of the Department of Public Works of British Columbia, are to be converted to oil burners. C. P. R. is having 2 new oil-burning passenger vessels constructed in Great Britain for use in "triangular service" between Vancouver, Victoria and Seattle. Fifteen rigs are reported to have been ordered, with completions necessary, from the Oil Well Supply Co., Pittsburg, through representatives sent to Calgary, Alta., where development is now in wild progress. A find of high grade oil is claimed near Munson, Alberta, within the past three weeks. Some 70,000 acres of Government land were filed on in two hours, ten miles from Athabaska Landing, near Edmonton, Alberta, when it was reported that oil had been found. This occurred Nov. 17. Alberta has gone oil crazy. Oil was struck October 7 in limited quantity on property of Calgary Petroleum Products Co., Ltd., section 6, 20-2, at 1562 feet, causing the craze. Calgary's Mayor, Board of Trade and Industrial Bureau have issued a warning against over-enthusiasm.

CALIFORNIA CONCENTRATES

Union Oil's gross sales, first 9 months of 1913, totalled \$15,130,486. An increase of more than \$2,600,000 over the same period, 1912. Total business for 1913 is expected to reach \$20,000,000.

Port Harford Asphalt Rfg. Co.'s plant at Avila, has been sold to the United States Asphalt Co. of Boston, J. A. Grant, president of that corporation, having made first payment.

Kern River Oilfields, Ltd., earned \$183,000 the past year, to Sept. 1. A dividend of 3 3-4 per cent on the issued stock, amounting to about \$120,000, has been declared—or such we gather from the English report.

Montebello's No. 58, on the Shiell's lease, 1600 feet deep, the first deep hole, is reported as "splendid."

The Santa Susana Syndicate Well No. 1, when deepened, is reported to have made 100 barrels per hour and to have settled to 400 barrels daily. These Ventura spouters make the old county look pretty good.

K. T. O.'s gusher, which made the most spectacular fire the West Side fields ever witnessed, was finally conquered, and is now well behaved, making over 2000 barrels daily, this amount being saved.

Monte Cristo Oil & Development Co., has had two kinds of big success these past two weeks. The Company's heavy oil production in the Kern River and McKittrick fields has been sold "in toto" to the Standard Oil Company at 35 cents per barrel, leading to the belief that the Standard will not now refuse to buy other heavy oil. A joyous Christmas present comes to Monte Cristo shareholders in the news of the success of the Company's well on the Robinson lease in La Habra Valley, consisting of 70 acres, which has gone into a high gravity oil sand. Well has a big gas pressure and looks fine. Location of well; section 18, 3-9. Nearest producer is Amalgamated, 3-4 of a mile distant. Nearly holdings are held by the Union and other large Companies. Monte Cristo shares jumped from 50 cents to \$1.05 in no time on the strength of the discovery. Henry Ach, the president and genius of the company, again justifies to the shareholders, that their confidence is reposed in the right person.

Standard's Wonderful High Grade Gusher on the Emery lease in the Coyote Hills, came in October 30, with a daily output of 20,000 barrels. The well, No. 7, is under perfect control. Choked down, it makes 9,000 barrels daily and without question or cavil, is the greatest well ever brought in south of the Tehachapi. It isn't due to Standard luck, but to Standard pluck and Standard genius, that the company is meeting with such phenomenal success.

Murphy Oil Sold? Perhaps. A deal is on with Standard on terms said by Dear Old Dame Rumor to be as follows: Cash, \$4,000,000. Property purchased: Entire control of running the property, absolute ownership of wells, and the oil therefrom to pay a royalty to Murphy Co., of 20 to 25 per cent. These terms are hearsay, nothing more. William Plotts developed the Murphy, the premier property of Whittier and the Coyotes—to date, excepting Standard's Emery. Dutch-Shell people were also dickering on this.

Tale of the Early Days

The First Exportation of Petroleum

M. H. Mosier, President of The Petroleum Company, the well known La Habra Valley success, not long ago told to the editor of the "Derrick" the story of the first oil exported from the United States to any country, and an interesting story it is indeed. Said Mr. Mosier:

"Johnathan Lockhart, of 'Lockhart & Frew,' who were among the earliest to refine oil in the earliest Pennsylvania days, conceived the idea of building up a foreign trade in lamp oil, which would even go so far as to put the burning of whale oil out of the running, an ambitious plan at so early a date. Whale oil was burned all over the world in those days, and there was absolutely nothing to compete with it, so that the whaling industry was one of great importance, so it will be seen that Mr. Lockhart looked far into the future. But, of all small beginnings from which an enormous industry ever has sprung, surely none ever started more quietly or in a smaller way. And this is the way of it:

"Casting around for some receptacle in which he could safely carry oil to Great Britain—in those days an unpleasant and even hazardous trip—Mr. Lockhart finally decided to use one of the common stone jugs ordinarily used for whiskey, to export the first American oil to England. Many will remember those old white and reddish brown stone jugs—about a foot high as a rule and far from beautiful in contour. But that stone jug faithfully served its purpose, carrying the product of the 'Lockhart & Frew' refinery safely to its destination, where, with Mr. Lockhart's help, it thoroughly convinced the British gentlemen with whom Mr. Lockhart was anxious to associate that all Great Britain could be lighted by the same quality product, and the consequential business agreement entered into started the tremendous export trade of today.

"Shortly prior to 1865—I don't remember the exact date, it may have been several years before that time—'Lockhart & Frew' were invited to enter the Standard Oil Company, then in its infancy. They accepted, and the millions they have since realized almost passes belief. Lockhart and Frew received about one-eighth, I believe it was, of the original capital stock of the Standard Oil Company. Not long afterward the Frew interests in Standard Oil were disposed of, but the Lockhart's hold their interest today, and they receive nearly four million dollars annually in dividends. It is needless to say that Mr. Frew could not foresee the immense expansion and strength of the Standard, or he would have held on to his stock; Standard Oil in those days was not considered anything unusually to be desired.

"The Lockhart & Frew refinery is still in operation by the Standard back in Pittsburg, making 'Elaine Oil.' I consider this true story far superior to any fiction that ever was written or could be written about the oil industry. Think of it: From one stone whiskey-jug of oil to today's huge exports; and from that originally small refinery an income of nearly four millions annually! The Lockhart family is a very fine one, rarely heard of in the newspapers, publicity in which they have always avoided. Today they enjoy the fruits of the foresight, energy and sagacity of the pioneer oil exporter of America—Johnathan Lockhart,

one of the pioneers who certainly has been well rewarded."

San Diego County Wells

(This information by courtesy of San Diego News)

Balboa Oil Co.'s well, Mission valley, 3100 feet deep.

Lo Tengo Oil Co.'s well is now down 3095 feet.

Ventura Pacific Oil Co. down 1154' feet has passed through 81 feet of oil sand, all told, and may soon be "put to production."

Pacific-Laguna well, near Encinites, has been shut in for lack of cash, but arrangements appear closed, which will permit a completion in oil or abandonment after thorough test.

Otay Oil Co.'s well is 2135 feet deep in very hard formation. Some oil showings are claimed for it.

South Fullerton well is being perforated for a "show down." They have oil, but the best sand from which to produce needs to be determined. At an early date results will be made known.

Alberta Mineral Age issued its fourth number Saturday, November 29, each issue showing improvement. The "Mineral Age" is interesting, very much so. It covers mining of every description, oil and gas news. Also, it BOOSTS—perhaps a little too much, but, the excitement is on. If for no other reason the Mineral Age should be read by California oil well supply men, and those spirits who always look for a money making chance in a new country.

Agency's October Return to the producers was 36 1-2 cents per barrel for 1,500,000 barrels, the total production of the membership for the month. This is 1 1-2 cents more per barrel than paid by Standard for 18 gravity or under.

Lost Hills continues to furnish good producers on 3, 26-20 Dudley Brothers recently made a strike at 860 feet, adding 3 miles to the productive territory in the antiline. Standard Oil's wells 29 and 36, section 9, have both gone into fine strata. Report says Standard will start drilling campaign.

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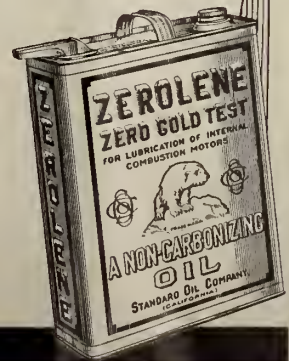
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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

Victory In the Face of Defeat.

Hats off to Captain John Barneson and Mr. Eugene De Sabla. In the face of the tightest financial conditions Europe has known for years, and hard financial sledding here at home, they have financed General Petroleum, they have delivered the message to Garcia, or, in ordinary parlance, "the goods." Their stock and bondholders are protected from loss which any unforeseen calamity might have subjected them to, by the vastness and stability of the interests they have induced to back them. General Petroleum and with it Union Oil—Agency Control, are virtually underwritten by one of the great houses of the world. We don't know what General Petroleum's physical assets are, but believe an investment of \$75,000,000 by the Wier Syndicate is comparatively small to gain complete control of the General Petroleum—Union—Agency organization. It is immense, and as we happen to know, a recent valuation of Union's actual assets alone, placed them clear above \$100,000,000. This is no exaggerated figure. It is a figure based on actuality. The Union has gotten out of its side lines, such as oil well supply houses, and business buildings, and is tending strictly to oil—to Union Oil. The result is that it is in fine physical condition—never better or nearly as good. Union controls Producers Transportation, owning 90 per cent of the stock. It owns, also, pipe lines, a storage system, oil tank fleet, refineries and an enormous acreage of oil land, developed and undeveloped. Combining its assets with the General Petroleum's, even Standard Oil is dwarfed in several ways. That Midway-Los Angeles pipe line, for instance. That is, when it is all under one management. In the meantime, the payments General Petroleum had to meet, have been met. Some estimable financial gentlemen in New York were waiting for General Petroleum's managers and organizers to fall down on the rocks, when they expected juicy financial pickings, so 'tis told here. But, once again, hats off to Messrs. Barneson and De Sabla—for their wonderful success.

Why Not Get After These People?

The government has its eye on Standard Oil; at least the news dispatches so state. Standard Oil is the greatest of all oil corporations, or rather the S. O. group is the strongest of all oil coteries. Standard Oil companies do our greatest oil exporting business; our greatest oil business in all ways. These are facts we are talking about, not heresay. Standard Oil employs an army of sober, industrious, wealth creating members. of American Society. In short, it is a wealth producer. It may possibly have ten billions of dollars as its resources, we don't know. But listen to this: Since 1907, a prominent statistician alleges, the people of this nation have SPENT FIFTEEN BILLION DOLLARS FOR TOBACCO AND INTOXICANTS! Standard Oil builds business, builds reserve funds; but in its career, in its fondest dreams, could it have imagined doing a business of fifteen billion dollars in seven years? The tobaccoists, brewers and distillers are the ones who have the strangle hold on this country; not Standard Oil. Why shouldn't the Government investigate THESE people at little bit? Why always Standard? Is it not just a little matter of habit?

* * * * *

Early Conclusion of Technical Article.

Professor Laird J. Stabler, of the University of Southern California, informs us that he finally sees a little leisure time before him in which to complete the article begun last April, on the refining industry in this State. In the paper mentioned he treated the early day refiner's struggles; in the paper to come he will discuss refining as it is practiced in California today, in an exhaustive manner, covering all phases. We eagerly await the receipt of this article for the value which we know it will be to the great refining companies throughout the country now taking the Derrick, also, because Mr. Stabler is a friend whom we shall be pleased to see duly honored for his extra-scholastic labors.

* * * * *

Holiday Expressions.

As this is our last issue before Christmas, The Derrick takes the occasion to thank the many who have shown their friendship—advertisers, subscribers and readers generally. It seems superfluous to remark that this Journal wishes a pleasant and satisfactory Holiday Season to all who read or do business with it. We wish this for everyone; but to our own particular associates who have aided and supported us, we naturally wish just a little extra good cheer—a little extra prosperity.

We don't expect the oil industry to be exceptionally prosperous during the next several weeks—but do hope and expect prosperity will strike us all in 1914.

* * * * *

Subscribers, a good many of you will be sending in your checks around the first of the year for the coming year's subscription. We should esteem it a favor if you care to make it a before-Christmas event. After Christmas there is often a lack of that pleasant jingling sound from the region of the pocket. Enough said—We particularly request that subscriptions be sent direct and not through agencies, who deduct, to cover handling, from 20 to as much as 40 per cent. We can use the money just as well as the agencies and your paper will reach you every bit as soon.—The Management.

California Production and Field Operations for October, 1913

Total production of all the fields for the month of October, averaging 263,325 barrels daily, summed up 8,163,075 barrels. Total shipments from the fields amounted to 8,419,374 barrels, so that 256,299 barrels were drawn from storage. Daily production dropped 20,751 barrels, while total shipments increased 632,155 barrels—there is a difference of one day in October's favor here. Total production to November 1st, of this year is 81,520,905 barrels, an average of 8,152,090 barrels monthly, so that with a constant production the remainder of the year we will have close to 98,000,000 barrels output for 1913—a fair showing for a "lean" year! Total consumption thus far, (Nov. 1st.) is 80,488,556 barrels, an average of 8,048,856 barrels monthly, so that we can easily look for 96-97 million barrels consumption this year; and if it keeps on advancing, it may outstrip production, even with the new big gushers. We estimate about fifty per cent greater production than Russian for the year; about five hundred per cent greater than Mexico.

Field figures show new rigs 5 less than in October; wells drilling 14 less; completed, 2 less; abandoned 14, as compared with 3 in September. Abandonments were as follows: In Coalinga, 6; in Los Angeles and Salt Lake, 4; in McKittrick, 2; and 1 each in Midway-Sunset and Los Hills-Belridge. Producers have dropped from 6,105 to 5,854, making an average daily output—State-wide—of 45 barrels per well. Following is the regular table giving the usual details:

	New Rigs	Comp'd Dr'g	Dur'g Mo.	Prod'g	Prod. Daily
Kern River	3	3	1396	20,250	
McKittrick			271	11,994	
Midway and Sunset	15	119	18	1170	109,935
Lost Hills and Belridge.....	11	24	6	173	15,864
Coalinga	3	54	5	886	52,259
Lompoc and Santa Maria		11		224	13,010
Ventura County and Newhall..	4	25	1	406	2,803
Los Angeles and Salt Lake		5		698	7,740
Whittier - Fullerton	2	78	6	503	29,222
Summerland				122	167
Watsonville				5	75
Salinas Valley	1				
Total	35	320	39	5854	263,325

Total crude oil stocks October 31, 1913, 47,421,993 barrels.
Total shipments from Fields October, 1913, 8,419,374 bbls.

Railroad Commission, after hearing all sides of the pipe line argument, is now considering the final written arguments submitted by both sides. It is a foregone conclusion that the pipe lines will be declared common carriers under the law and just as certainly will the constitutionality of the acts be fought out before the Supreme Court of the United States, unless the resisting companies submit.

Exports—Neither the September nor October export bulletins have yet reached the Derrick, the reason for the omission of these important figures, which will be covered in a single table later on, when we have had a chance to get the data.

Storage: Kern Trading & Oil Co., or S. P. Ry. Co., for 1,500,000 barrels, in Kern River District, for light gravity oil, which it is said will be sold to Associated.

October Exports of All Goods from San Francisco were \$13,876,139, the heaviest month in history.

New Publications Tersely Told Of

Bureau of Mines, in its Technical Paper 51, Petroleum Technology, discusses "Possible Causes of the Decline of Oil Wells, and Suggested Methods of Prolonging Yield." The chief cause of decline, pumping until dry, is given little space, since mishaps and mismanagement are what the paper aims at correcting. An interesting, instructive, valuable paper; valuable for every oil operator, no matter where he operates.

Geological Survey: Precious and Semi-precious metals in California and Oregon in 1912, by Chas. G. Yale. Can be had by writing for it. A valuable index to the gold, silver, copper, lead and zinc industries in the States covered.

The Lost Hills Gusher issued its first weekly number on Thursday, November 13, a very creditable first issue, indeed, especially for so new a country. The paper is filled with local news—the greatest recommendation it could be given. The paper is very well supported by the community.

"**Bulkheads**" is the title of a pamphlet of the utmost interest to marine engineers, if they can obtain the same. The subject is treated in an entirely different manner from the usual, the stress of the discussion being laid upon the fact that from gunwale to gunwale, cutting the steel ship diametrically in two by rivet holes placed at 17-8 inches distance from each other, a place is made for the double angle frame to which it is customary to attach the bulkhead to the ship's hull; and that one shipwreck after another has occurred where the vessel has broken in two directly as a result of prevalent method. Photographs illustrate the point in a manner to demonstrate beyond power of speech exactly what harm is done. In addition is given a partial list of vessels having recently broken in two at bulkheads. Samuel Holmes, Morris Bldg., 66-68 Broad Street, is the author. The "Derrick" seriously recommends this discussion to those who are about to order tank steamers, in order that they may grasp the value of some one else's experience to begin with and not at their own expense later on.

Columbia University announces its course in Highway Engineering, year 1914, in a neat pamphlet just mailed to us, giving the names of the instructors, the equipment, the libraries of reference, the various courses of instruction, etc., and a general idea of what a Highway Engineering course consists of. Arthur H. Blanchard is the Professor of the Highway Engineering College. He is one of the country's eminent authorities on the subject, and sits on a number of important Highway Commissions. Dr. Blanchard is a constant reader of the "Derrick" and always favors this journal with the important events in his field.

California State Mining Bureau announces the publication for free distribution as follows: Bulletins 31, 62, 64, 65 and 66. This last to be ready January 1, 1914. These are, in rotation as named, Chemical Analyses of California Petroleum; Mineral Production of California, 1887-1910; Mineral Production in California, 1911; same, 1912; Mining Laws of California, now in press. Also, announcement is made of the free determination of mineral specimens by the Mining Bureau, from all points inside the State. The Bureau is doing things; things worth while.

Interesting Developments of Recent Date

WEST SIDE DEVELOPMENTS

Sunset Monarch Will Drill Deep Holes

At least two deep wells are shortly to be drilled by the Sunset-Monarch Oil Company, and the probability is that more than two will be put down. The drilling will be under the direction of Superintendent Moss, and rotaries will be used. The two first holes will be spudded in as soon as the machinery arrives. "South Chester" casing has been selected to pioneer this territory in the deeper formations, the order for the same being placed with "Woods & Huddart," Western Agents for the South Chester Tube Company of Chester, Pa. Several carloads of casing are now en route to Maricopa. This casing has a really remarkable record for durability, especially for deep drilling in difficult territory. In the very deep Southern fields, where drilling is extremely hard and any fault in the casing is likely to run into thousands of dollars, South Chester casing has given uniform satisfaction.

It is expected that the Monarch wells will be not less than 3000 foot holes at the least and from this it is inferred that the Company is after light oil only. Heretofore asphaltic oils have been the sole production, this output being used in the refinery which the company has operated for many years, it being one of the earliest of any operating companies now in existence in the Sunset field.

Combined Completes No. 5—Shareholders in Combined Oil will be very pleased to know that the Company has successfully brought in No. 5 with a production of between 75 and 100 barrels per day, the well being finished at about 1,400 feet. Hauling of the derrick timbers for No. 6 will begin immediately; drilling should be in progress early in December. The production is increasing each month and the prospects are that early in the new year they will have a steady output from their six wells, which, with the recently levied assessment money (almost all of which was readily paid into the treasury) should carry them into prosperity.

Ethel D. Oil Co.—It is reported here in San Francisco on good authority that the Ethel D. will commence drilling a new well either this month or in January.

Spreckles Oil Company, of which John M. Keith is the backer, will shortly have a new field manager, Thos. Hayes having been appointed to this position, due to a variety of causes, principal of which is stated here in the city as being his success in bringing in the gusher obtained in October. Mr. Hayes at that time cemented several wells, leaving them, it is claimed in excellent condition. But the report is now that these wells have been flooded with water under the management in control after Hayes had concluded his contract, and that it will take from \$10,000 to \$35,000 to get the lease in shape again. Possibly this explains the reason for Hayes' reappointment. Further details are not known to us at this time.

Ventura Possibility. A possible oil bearing territory, it is thought, will shortly be tried out for its oil content. The property is that embraced in the Jesus Maria Rancho, belonging to the Parrott Estate, and consisting of approximately 9,000 acres located near Lompoc. It extends from the Pacific Ocean eastward in the direc-

tion of and near to the Purissima field. Negotiations are in progress looking to the drilling rights and a hole will be put down in the event of their favorable conclusion. The venturers do not care to give out any statement at this time.

REPERTORIAL SLUDGE

NOTE—"Sludge" is the sediment that settles to the bottom of the settling tank; repertorial sludge, the barest mention of the gist of reported events.)

Germany: Government Monopoly Bill again to be pushed in Reichstadt, just opened, with the old-time slogan "Down with Standard Oil!"—meaning out with American goods; a government monopoly, privately owned, will enrich good Germans while "the people" think they are fighting a bad corporation. Some honest opposition to Standard, is, however, with the German Monopolistic movement.

Great Britain: The Queen Elizabeth, armed with ten 15-inch guns, recently launched as the heaviest vessel ever turned out of any British shipyard, uses oil exclusively; speculation as to supply source in case of war is general; it is believed Mexico is the apple of England's petroleum eye. Nov. 28: The tank steamer "San Hilaris," one of the ten tankers constructing for the Eagle Oil Transportation Co., Pearson's or Lord Cowdray—successfully launched today. American lady, wife of American director of company, broke the bottle of ship's bow. "San Hilaris" carries 15,000 tons dead weight; constructed to highest class Lloyd's; Length 550 feet; fitted wireless, and for Suez Canal trade if so desired.

Miscellaneous U. S. Secretary of Navy Jos. Daniels, places the Navy's fuel oil requirements at the present time at 30,000,000 gallons, or less than 1,000,000 bbls. of 42 gallons each. The secretary states price of oil rapidly rising and wants assured supply for the Government. Indiana Standard Oil's million dollar refinery at Casper, Wyo., capacity 8,000 barrels per day, is being rushed to a rapid completion, 200 men being steadily employed. Franco-Petroleum, redrilling or deepening a well on sec. 22, put it down 11 feet further than where they had 150 bbls. daily output and got a flow of 1000 bbls. per day. Other wells will be deepened. Midwest Oil, in a hole to the north of the established field, at Casper, Wyo., on sec. 14, has 500 bbls. daily output at 1410 feet. A big surprise. The **U. S. Gov't. Suit Against Midwest**, in which title to the lands acquired after the first withdrawal order is at stake, has been set for Jan. 4, in the U. S. Supreme Court. This will be the most important suit over Western oil lands ever to come before the country inasmuch as title to the Naval Reserves and much other land in California and other Western States will be decided. During the first nine months of this year Midwest's gross earnings were in excess of \$2,000,000. Net earnings were in excess of \$1,200,000, not counting depreciation of plant, amortization fund, etc. "Falcon" (not "Bulcon") oil field, 16 miles N. E. of Colorado Springs, is about to be developed for oil; the Middle Western States are all wildly searching for it. Near Denver, the Mt. Morrison Asphalt, Oil & Gas Co. has drilled to a depth of 1350 feet and claim 67 feet of saturated oil sand. Success report daily expected. Well is nine miles from Denver.

Company and Field Reports

COALINGA

Condensed from Guy H. Salisbury's Special Report

Casing by the Mile, sixteen miles of it, in fact, is reported on its way to Coalinga from "eastern mills," the shipment occupying 55 freight cars; the casing being 6 1-4 inches inside diameter. Not being for Standard or Associated companies, the finger of suspicion points towards Shell-Royal-Dutch, otherwise California Oilfields, Ltd., or American Gasoline, the big California subsidiary of the Asiatic Petroleum Co., in turn controlled by the "Shell-Royal Dutch" or the Rothschild-Balfour coterie. If this shipment is for the Royal-Dutch, it spells more or less immediate construction of a Coalinga-tidewater pipe line. Time solves all riddles.

United Development Company has resumed operations on 17, 20-15, the 10 inch casing having been landed at 2600 feet in No. 2 and drilling resumed with 8 1-4. The "pay" is expected at 3100 feet. Well No. 1 is making 150 barrels per day of clean oil. The 3 wells on 19, 20-15 are making a steady output. Company is doing its annual assessment work on its undeveloped holdings.

Warthan Oil Co., 33, 20-13, are preparing to resume. Well is 400 feet down; discontinuance was due to lack of drilling water. There are many seepages in this locality showing a high grade oil.

B. I. Potter Interests, 35, 20-14, have well No. 5 down about 275 feet; going. No. 4 is making water and gas with an increased oil showing.

Pluto Oil Co., 19, 25-19, Devils Den, is causing much excitement despite utmost conservatism on the part of the management. After a deep hole had been drilled, a successful cementing job was performed at 2510 feet. Two holes were then ripped in the 8 1-4 inch casing and oil came to the top of the 2000 feet column of water standing in the well, accompanied by gas. Pressure quite strong. At 2000 feet, 70 feet of apparent oil sand was passed through. This was the reason the company backed up. The water has been bailed down 1600 feet and the oil taken out tests 28 degrees, Baume. Whether there are commercial quantities is all that remains to be determined to start activity. If this well shows up as a payer there will be immediate results in the shape of drilling by many interested parties. Some appear to believe the well has hit a crevice by accident. A lucky accident, if so. Others, more hopeful, believe a genuine oil producing stratum. Only development will show.

Eighty 55,000 Barrel Tanks, "Dame Rumor" says, are under process of construction for Shell-Royal Dutch's tank farm, to be located 3 1-2 miles from Standard Oil's pumping station on 36-19-15. It is reported the first 40 tanks of the 80 ordered will soon be on the way and BIG doings are promised for 1914. Total steel storage will be increased 4,400,000 barrels if dear

old "Dame Rumor" is correct. Rumors as to where Dutch-Shell's big refinery will be placed, vary quite materially; from San Francisco Bay and the upper reaches thereof to the vicinity of Los Angeles and anywhere in between—affording plenty of room for speculation.

William Keck, inventor of the Keck swinging spider, former drilling superintendent for the K. T. O. in Coalinga, has returned from a six month's stay in Venezuela, where he went in the employ of the Barber Asphalt Paving Company. He was excellently treated, he said—but could not stand the country, especially after his little 16-months old daughter passed away. A son was born to Mr. and Mrs. Keck while away. Their first born's was returned for interment in its native country. The Kecks think that our own land's deserts are preferable to the most beautiful foreign country spaces.

Associated Pipe Line Co. has completed a water well furnishing good domestic and boiler water from a depth of 1010 feet, at new Lewis station, 17 miles north of Coalinga, on the Port Costa pipe line. A second, reserve well will probably be drilled.

Turner Oil, 2, 20-15, is running 5 strings of tools and will soon be running a sixth on "well No. 11" as the derrick is now building for it.

Coalingans in Mexico

Californian drillers continue to brave the promised serious troubles in Mexico, by staying there, forever "on the job." God and their six-shooters, combined with the contiguity of the American battleships, will doubtless preserve them until they again grace California with their presence. The East Coast Oil Company, (Southern Pacific) has the following West Siders in its employ: W. I. Janes, "Jim" McIntyre, "Bill" Sherwood, Arthur Hortley, "Ed" Morgan, "oJe" Allen, "Bill" Owens and Richard Raeger. "Happy" Mahoney, reported killed by rebels, is doing drill duty for Tampico-Panueco Oilfields, Panueco field; while Almer Dodson is working for the Spellacys on the Topila Petroleum property. Ray Armstrong is in the employ of Shell-Royal Dutch. "Jim" Seiffington and "Tom" Goddard work for E. L. Doheny on the Huasteca, while Homer Sprinkle is working for the American Fuel and Petroleum Company. And never a word of their native land do they get except through travelers—for American papers are barred from Mexico. How long, oh Lord? Etc.

Major Salisbury III

Guy H. Salisbury's illness has finally brought him to bed at his home here in San Francisco, unable to see anyone and not permitted by his physician to answer the telephone. The Major was taken seriously ill in Coalinga about four weeks ago, suffering much. He was taken to the hospital, and as soon as able to travel came to San Francisco. It is thought that after a rest Mr. Salisbury will be "as good as ever," since overwork brought about his illness. A host of friends will be glad to know that the Major is improving under the care given by his wife and daughter.

PATENT FACTS NEW TO ALL

Of the important patents granted to inventors during the past several months by the Patent Office, directly pertaining to the oil industry, 1.6 patents were granted to California inventors for every one patent granted to the inventors of the next state most prolific of oil well improvements, Pennsylvania. There is quite a story behind this simple fact.

California territory is recognized the world around as affording the most difficult drilling known. It is almost an axiom that any tool which can negotiate California conditions satisfactorily, can be successfully used anywhere else in the oil regions of the world. Our tools now lead all for deep drilling purposes. The Union Tool Company's business extends around the globe. Our other smaller firms also deal with every oil producing section. Japan, Sumatra, Borneo, New Zealand, and the Galician fields are all using California tools at the present time in greater or less quantity, (and it's getting to be a greater quantity all the time,) among the antipodean fields, and in Trinidad, the various South American countries and lastly in Mexico, California tools find high favor, as also, they are used throughout the West, and it is reported that several rigs using California tools are now doing mighty satisfactory duty in Western Canada.

Of the patents reported exclusively for the "Derrick" during the past several months by Mr. Jos. M. Nesbit, patent attorney of Pittsburg, 68 have been granted American inventors and 3 to inventors of distant lands. Out of the 71 patents thus granted, 25 have been given the world by Californians. This is a small fraction less than 36 per cent of the total of 71. Of the California patents, 13 were granted to Los Angeles inventors, naturally enough, since Los Angeles is the oil well supply manufacturing center of this state. Next to Los Angeles as an improver over the old, comes Coalinga, where 6 patents have recently been granted. From miscellaneous points in the state various inventors have secured another 6 patents on their articles, making a total of 25 California patents.

Pennsylvania follows California with 16 patents and is followed in turn by Texas, with 8. The remainder of the United States furnished 19, Oklahoma leading in this list with 3, the other oil states having one or two patents each to their credit. The foreign patents were granted to widely separated inventors, these living in New Zealand, Borneo, (Dutch East India) and Rumania. Following we append a list of the 71 patents under discussion, and suggest that if further information is desired, it can be obtained by writing to Jos. N. Nesbitt, Park Building, Pittsburg, Pa., from whom printed copies of each patent may be procured for the sum of 15 cents per copy. The list follows:

(NOTE:—The list of California patents coming under the scope of this article was run in the last number of this paper.)

Pennsylvania—

Process of and apparatus for distilling petroleum, J. W. Van Dyke and W. M. Irish, Philadelphia, 1,073,548.

Automatic oil release, L. D. Owrey, Pittsburg, 1,065,169.

Method of producing carbon or lampblack from methane, Gustave Fernekes, Pittsburg, assignor to John A. Snee, West Elizabeth, 1,066,894.

Clamp for pipe joints of the bell-and-spigot type, James Clark, Bedford, assignor to S. R. Dresser Mfg. Co., same place, 1,070,667.

Drill jar, G. F. Bell, Crafton, 1,068,844.

Pipe coupling, C. A. Smith, Scalp Level, 1,068,943.

Oil pumps, (6) Rudolph Conrader, Erie, 1,066,798, 1,067,312 to 1,067,316.

Sucker rod packing for oil well tubing, C. A. Waitz, Rouseville, 1,060,961.

Metal bung, C. E. Mittinger Jr., Sharon, assignor, to The Petroleum Iron Works Co., same place, 1,062,601.

Device for pulling tubes, G. W. Fair, Butler, 1,070,124.

Art or method of making gasoline, E. W. Tait, Bradford, 1,069,908.

Texas—

Well screen, M. E. Layne, Houston, 1,062,717.

Under-drilling bit, H. W. English and M. A. Bron, Electra, 1,067,416.

Fuel oil controlling valve, William Sneddon, Del Rio, 1,062,614.

Pump and rod coupling, T. S. Kemp, Clarendon, 1,067,819.

Drill-cable clamp, R. F. Clayton, Wimberly, 1,061,221.

Rod puller, J. H. Hooker, Silverton, 1,064,073.

Well cylinder, A. L. Ligon, Pecos, 1,073,257.

Pump and rod coupling, J. B. Massey, Odessa, 1,067,998.

Miscellaneous—United States—

Drilling cable, Thomas Gore, New York, 1,071,734.

Apparatus for pumping, S. W. Titus, New York, 1,069,353.

Pipe wrench, C. L. Dunham, Sistersville, W. Va., 1,072,320.

Casing head for oil and gas wells, J. T. Callanan, Parkersburg, W. Va., 1,072,910.

Well drilling apparatus, James Maher, M. M. Maher, and Thomas Jerry, East Liverpool, O., 1,072,964.

Packing head for deep wells, J. E. Shiery, Geneva, Indiana, 1,071,360.

Deep well pump, W. S. Cunningham, Springfield, Mo., 1,065,225.

Double acting deep well pump, W. B. Erb, Chicago, Ill., 1,065,669.

Screw joint for oil tools, A. B. Owen and J. S. Snyder, Lawrenceville, Ill., 1,067,878.

Device for removing casings from drilled wells, Nelson Beaumont, Racine, Wis., 1,073,839.

Drive well-point, O. E. Andrews, Charleston, Mo., 1,073,835.

Well pump, R. H. Kipping, Franklin, La., 1,073,143.

Wire-line rope sockets (2), Joseph Burns, Okmulgee, Oklahoma, 1,073,469 and 1,073,470.

Rope socket, F. W. Shirey and J. W. Dodd, Tulsa, Oklahoma, 1,061,134.

Well boring tool, A. G. Collins, Everett, Wash., 1,065,294.

Contactile well boring tool, A. G. Collins, Everett, Wash., 1,065,590.

Foreign—

Apparatus for sweating crude paraffin-wax or like mixtures or substances which melt at different temperatures, Daniel Pijzel, Balik Papan, Borneo, Dutch East India, 1,070,730.

Means for temporarily closing gas mains and the like, Clifford Toon, Christchurch, New Zealand, 1,066,343.

Boring process for deep wells, Richard van Sickle, Campia, Rumania, 1,065,409.

Seaboard Oil & Transit Co.—An unofficial report given The Derrick by one whom we believe would not make any incorrect statement, is that the sum realized from the recent assessment was \$33,743.62. As the assessment was at the rate of 1 cent per share this means that 3,374,362 shares of stock are outstanding, indicating that considerable more than half of the shareholders met their assessment. This may not include their payments, so that much more of the stock may have been retained on the time-payment plan, while only cash may thus far be accounted for; this being purely speculative. The present number of shareholders is not known to the Derrick's correspondent, nor the exact number of delinquent shares. But our correspondent states he has been informed that "2,000,000 shares of the stock which became delinquent under the last assessment was purchased by the Gate City Oil Company at the delinquent sale; and that the shares of stock of any stock holder, which were purchased by the Gate City Oil Co., may be redeemed upon payment of the amount due on the assessment, and the costs." This is taken to mean that the Gate City writes off \$25,000 on its purchase price by the Seaboard, holding the stock as security. If it holds a virtual two-fifths of the Seaboard's stock, it is close to being in control of the Seaboard. The Seaboard's present running expenses, as far as office outlay is concerned, are as follows: President, \$250 per month; Secretary, \$150 per month; Stenographer, \$75 per month; office rent, \$55 per

month; a total monthly office expenditure of \$530, not counting stationary, stamps, issuance of bulletins, etc. The vice-president and directors receive no salary, according to our correspondent, who also states he does not know the exact monthly output of the Gate City lease, nor its monthly operating expenses. A change has recently been made in the superintendency of the Gate City lease and the new man in charge is said to be a "hustler." Concerning amount of money to be expended in developing the Gate City by deeping old wells and drilling new our correspondent gave no information. From another source we learn that Mr. Louis P. Boardman, the attorney representing the trustee for the creditors, has objected to the purchase price at which the Seaboard contracted for the Gate City as being too high. Whether objection is due to the lessened output since the Seaboard took charge of the Gate City property, under the Seaboard's former management, or to present oil prices and general conditions, or to his belief that the original purchase price was too high, makes little difference to the shareholders. If the price was too high and the creditor's attorney can prove it and can affect a reduction to the proper price, the shareholders will of course, be benefitted in proportion. If the price was not too high there is no harm done. The company's directors will probably touch upon the matter in their report to the shareholders; as to this, we have no definite information. Any further data that we can obtain will be published at the earliest opportunity.

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THE STOCK MARKET

San Francisco Quotations

The market is very quiet here. Few stocks are quoted, few sold. The holiday season appears to have knocked trading in the head. But, despite that, the interest displayed in oil at present is not a public one, strictly speaking; oil people, actively interested in the business, are, for the most part, the persons doing the buying. They are in control of the prices. As regards these—never lower nor better, in a majority of cases, from an investment viewpoint. By "never lower" is meant, "in proportion to assets and as a general proposition." Associated, paying and in better physical and financial condition than ever before, from all reports, can be had from 38-40. Two years ago it sold at 60. Caribou, at \$1.20 to \$1.35, paying regularly a very high rate, and with a flowing well of high grade oil, which opens a new source of wealth to the company, is certainly very much a bargain. Monte Cristo at \$1.02 to \$1.10 never looked better. The sale of its low gravity oil to the Standard, its new holdings, with reported new well in the South, and its management, make it a splendid buy. Premier seems off color—shareholders unwilling to dispose of their stock at such impossible offers as have recently been made—such as 15 cents. It would surely be a hard pressed person who would sell at that price. Traders, an excellent company, is not much quoted of late. Sunset Monarch is little traded in. There have been some sales of Turner lately, but not to any extent, while W. K. remains strong at \$3.20-\$3.25. Following are some of the recent quotations:

COMPANY	BID	ASKED
Associated Oil	\$ 38 00	
Brookshire		30
Caribou	1 10	1 35
Claremont		50
Coalinga Central	20	
Coalinga Mohawk	70	
Maricopa "36"	26	
Monte Cristo	1 02	1 10
Pacific States Petroleum		15
Paraffine	25	
Palmer Union		02
Pyramid		04
Republic	10	
Shawmut		50
Sovereign	08	
S. W. & B	10	
Sunset Monarch		1 00
Turner	2 10	1 00
West Coast Pfd.		
Wolverine	40	
W. K. Oil	3 25	
Storage Certificates	30	

Los Angeles Quotations

In Los Angeles there is always an interest in oil shares and always some one willing to do a little trading at whatsoever prices rule the day. Prices at present appear lower on quite a few of the important stocks on this exchange than in San Francisco as the quotations below will show. These quotations can be taken to voice, for the most part, the dealer's and shareholder's views of the value of the various stocks under

existing conditions, so that there is no reason to discuss essential or actual value of the shares as determinable from the physical values of the properties back of them, and of the various managements. The list follows:

COMPANY	BID	ASKED
Amalgamated Oil	\$ 76 50	
Associated Oil	37 87½	38 12½
Calif. Midway Oil Co.	04	07½
Central		85
Columbia		75
Fullerton Oil		3 55
Globe		02½
Jade Oil Co.	03	
Maricopa Northern	05¼	05½
Mexican Pet., Ltd., Pfd.	75 00	
Mexican Pet. Ltd. Com.	46 50	
Midway Northern	09	
National Pacific Oil Co.	05	05¾
Olinda Land Co. (Oil)	31	35
Rice Ranch Oil Co.	90	1 10
Trader's Oil Co.	15 25	30 00
Union	54 50	55 00
United Oil Co.	11	12

California Standard Oil's stock valuation. An article on this subject will appear in the next issue. Present quoted price on New York curb is \$223-\$225.

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No. 5

What the United States Government will do for the Oil Industry in 1915

The Plans of the United States Bureau of Mines Co-operating With the American Petroleum Society and the Exposition Company for a Great National Petroleum Exhibit

By **DR. IRVING C. ALLEN**, of the U. S. Bureau of Mines

The Bureau of Mines and the American Petroleum Society

The U. S. Bureau of Mines has been authorized by Congress to study the problems involved in the handling of crude oil and gas, in an endeavor to reduce the wastes and improve the products therefrom. Testing stations have been established in Pittsburgh and San Francisco for this purpose and a number of men have been in the field during the period since the Bureau was authorized to carry on this work, studying the problems in production and handling. It has developed during this time that there are about 30,000 oil men engaged in the industry (See note.) As these men have much valuable information it has been brought home to the Bureau that a society should be formed having as its end the comprehensive study of the many problems involved; and therefore, in August and September, 1913, a society was formed, a constitution adopted and officers elected.

This society is known as the American Petroleum Society. Its object is to promote the science of petroleum technology, to obtain and circulate information thereon and to secure the co-operation of its members in conserving the petroleum resources of America.

The American Petroleum Society is working in co-operation with the International Petroleum Commission, which is an international organization of scientific men studying petroleum.

The American Petroleum Society will hold its first meeting in October, 1914, in New Orleans, and its second meeting in San Francisco, in October, 1915, at the Exposition, where it is expected that a great World

Petroleum Congress will be held, and that the petroleum men of the world will assemble in the most remarkable and enthusiastic gathering ever known. In conjunction with this Congress there will be an exhibit of the Petroleum Industry, of which the following is a tentative outline; subject, of course, to revision and modification:

Outline of the Proposed Petroleum Exhibit at Panama-Pacific Exposition, 1915, under the Auspices of The American Petroleum Society and The U. S. Bureau of Mines in Co-operation with the Department of Mines and Metallurgy of the Exposition

The exhibit will display the following:

1. Methods for the conservation of oil and gas in drilling wells; showing the methods of preventing waste of oil and gas under high pressures of gas and large flows of oil. (See paragraph 7.) This will be of interest to the Pacific Coast, Gulf and Mid-Continent men.

2. Methods for the conservation of oil and gas under low pressure when the congelation of paraffine around the bottom of the wells seals up the wells and prevents the inflow of oil. This will be of interest to the Appalachian oil fields.

3. Field Storage—showing model of properly constructed tanks for collecting oils from flowing wells.

- (a) for heavy oils proper baffle plates to prevent splashing, and,

- (b) for light oils closed covers with baffle plates

and column coolers; also fitted with vacuum systems to draw off vapors for later compression and use for blending. (See paragraph 8.)

(c) Protection against loss by lightning.

4. A working model of an electric water-oil separator showing methods of continuously separating water from emulsified oil. (Cottrell process).

5. A model of a developed oil field, drawn to scale, showing (a) surface details of some well defined and active California oil field, and (b) a cross section of same showing strata of oil, water, etc.

6. A working model of a pumping well and a flowing well.

7-a. An actual drilling well in operation, full size, showing standard equipment, full outfit of tools, cables, tubing, pumps, power, etc., equipment for drilling, both rotary and standard systems, equipment for handling high pressures and large flows of gas and oil, equipment for conserving oil and gas under low pressures and small flows. The above should be throughout in accord with the most modern and approved methods.

7-b. Compressor installation showing method of producing gasoline from natural gas.

8-a. A working model of a battery of stills of probably ten stills of 50 gallons each, showing the operation of continuous oil distillation according to the latest and most approved methods probably according to the Austrian Imperial Refinery, showing the best conservation of heat and fuels, and of the gases and light vapors from the stills as conserved by compression and later used for blending.

8-b. Also vacuum systems for heavy oils should be shown.

8-c. Steam systems.

8-d. Systems with inert gases (wells).

8-e. This battery of stills, running continuously, will produce from 15 to 20 cuts producing:

Gasoline. This gasoline can be shown burning directly in an automobile and a stationary engine.

8-f. Gas Oil. This gas oil can be shown producing domestic gas by means of an illuminating gas producer and the gas can be shown burning in lamps, cook stoves, etc.

8-g. This gas oil can also be shown producing fuel gas by means of a fuel gas producer and the gas shown driving a gas engine.

8-h. The heavy naphthas can be shown burning directly in a heavy naphtha or kerosene carburetor in an automobile. This heavy naphtha carburetor is an important economic development, and in the immediate future will be one of the greatest factors in the production of cheap automobile fuel.

8-i. The heavy fuel oils can also be shown driving a Diesel engine, both marine and stationary.

8-j. The fuel oils can be shown burning in oil burners under steam boilers for generating power, both stationary and marine.

8-k. Petroleum products of all kinds will be produced. From this battery of stills will come petroleum as is used for pharmaceutical and chemical purposes, and also for blending with heavy naphthas, making them usable in automobiles, gasoline, kerosines, paint, naphthas, spindle oils, light lubricants, engine oils, cylinder oils, vaseline, paraffines, etc. These products should be shown actually in use in their proper field.

8-l. Asphaltum residues should be shown in the actual construction of streets and pavements.

8-m. Methods of treatment should be shown, showing ink washing and purifying methods.

9. There should be an exhibit of ALL the petroleum products produced in the United States. There should be samples from each refinery; also the crude from which these samples are made. The percentages of the commercial composition, chemical composition and the physical characteristics of these products should be shown. Each company should be induced to send a five-gallon sample of each of their products. These could be shown in attractive glass bottles properly illuminated and labeled with data of interest. The excess of samples could be used for critical scientific examination. This examination will later develop important information as to the comparative quality of oils produced from various sources and of various origins, of great commercial, scientific and economic importance.

10. There should be a model and fully equipped working testing laboratory showing the latest and most approved methods with instruments and apparatus used in scientific testing and actual testing should be carried on during the exposition.

11-a. There should be moving and still pictures with lectures by eminent men interested in the petroleum industry. These should be given in a lecture hall at stated periods.

11-b. Five-minute addresses should also be given continuously describing the methods of drilling under paragraph 7, describing the still and its operations, under paragraph 48, describing the refining and treatment of oils, describing the testing laboratory and methods. (See paragraph 10.)

As the value of Crude Oil and Gas produced in the United States in 1912 was in excess of \$248,000,000, and in 1913 will certainly be found to have exceeded a quarter of a billion dollars, to say nothing of the values invested in refineries, oilfield machinery, pipe lines and so on, and as petroleum is an absolute necessity in the industries and is international in character, and as there are more than 30,000 oil men actively engaged in the industry in the United States alone, it is reasonable to suppose that this exhibit and Congress will be a success.

(NOTE: When the editor asked Dr. Allen exactly what he meant when he said there were "30,000 men engaged in the industry in the United States alone," the latter said he meant "men of brains; the doers; the operators, refiners, and those who are not merely engaged in manual labor in the oilfields.")

Columbia University announces that "Highway officials, chemists, contractors, engineer-salesmen and all others interested in any subject in Highway engineering, are cordially invited to make use of the **Davis Library of Highway Engineering** for current reading, research work, consultation of current trade catalogues, price lists, specifications and technical periodicals. The Library is located in rooms 407 and 410 of the Engineering Building. The Highway Engineering College is holding one-month Graduate courses, covering the mining, manufacturing and testing of bituminous materials, and the construction and maintenance of all types of roads and pavements. For complete information, apply University.

Ralph Arnold spent the year's end in San Francisco, having returned from South America.

The Settling Tank

The International Geographical Congress will hold its next meeting in Brussels, in 1917. Several California geologists will attend.

The "Siam," the first Diesel-engined ocean going vessel to call on the Pacific Coast, is now reported to be close to the end of her long trip from Antwerp, via the "Horn," which was estimated at 65 days duration. The vessel is bringing 9000 tons freight.

"Wotan," is the name of the ship having the largest marine Diesel engine in existence, a six cylinder, 2000-h. p., Carels-Diesel. Her first trip to New York was in every way satisfactory proof of the reliability and economy of the Diesel type engine for freighters.

State Mining Bureau's 1913 Mineral Estimate places Oil at the head of the State's mineral resources, by \$23,500,000 over the value of the gold output, giving Oil's value for 1913 as \$43,500,000 at the well, a gain over the Bureau's figures for 1912 of \$1,500,000. The Bureau says that our production will be shown to have totalled 93,000,000 barrels; and that the average price will have increased slightly over the 1912 price. (No doubt about that, at all). The Bureau's comment on the situation at the end of the year is that it is a "gratifying" one.

Whittier Withdrawal Order, issued by President Wilson, covering 5140 acres of land in the Whittier-Fullerton district, is believed to have been a precautionary measure to protect the present owners of the property. Those chiefly affected, in case there is any effect, will be the Standard on part of its Murphy holdings, the Central, the Fullerton Oil Co., and in lesser degree the Union, General Petroleum and Puente Oil Companies.

State Mining Bureau has had R. P. McLaughlin working in the Coalinga Field the past few weeks, collecting cost data, data on length of life of wells, and studying water conditions, the Bureau having in mind assisting the work of the present Water Commissioners of the counties. This data will be published in the book the Bureau is compiling to cover the situation comprehensively in one volume. The Bureau has also had some work done in Monterey and San Luis Obispo Counties and is preparing geographical maps of the districts covered. More data later.

Mexico's Production for the year just closed is estimated at 16,000,000 barrels, of which 10,000,000 barrels was shipped to the United States. About \$200,000,000 has been invested in the Mexican oilfields in the past ten years, half of this amount by Americans, the balance by English, French, and Mexicans. The English are the next largest investors after Americans, having sunk about \$75,000,000 in Mexican fields. All that holds down production is the unsettled political condition.

Midcontinent Overproduction is threatened, as there is a daily surplus of 14,000 barrels, and the tankage is rapidly being exhausted. We don't know enough about midcontinent fields to hazard whether this spells reductions in price or not, but it surely looks as though the operators had better slow down the drills if they want to keep present prices where they are.

The Withdrawal Case Appeal has at last reached the United States Supreme Court. This concerns President Taft's famous September 27, 1909, withdrawal order, covering millions of acres. The district Federal Court sitting in Wyoming last year decided in favor of the Midwest Oil Company, when the Government brought ouster proceedings and the present appeal to the Supreme Court is the Government's final effort.

Standard Oil is reported to have a new refining process whereby almost twice the amount of high grade products is derived from the same grade of oil, which it has heretofore been possible to extract. If this is the case—what an increase in revenue and what an economic saving! The Standard is now taking below 18 gravity on 2-year contracts at 35 cents per barrel, although its Emery production has lately been curtailed because of inability to handle. Of course, that's south of Tehachapi.

State Railroad Commission has ordered a reduction of 4 cents per 1000 c. f. in the wholesale price of Kern County natural gas delivered in Los Angeles, the Commission declaring a return of 10 per cent per annum upon invested capital sufficient to the Midway Gas Company. Now, what if that gas pressure lets up, the flows suddenly quit and the Company is left "in the lurch?" What?

Dutch-Shell's Tank Order was not for eighty tanks, after all, but for twenty, each of 55,000 barrels capacity. Also, the bulk of the order did not go to an Eastern works, but was placed here in California—with the Lacy Manufacturing Company of Los Angeles, which is especially well equipped to care for this kind of work. Inquiry has developed that the tanks ordered are of extra heavy material. Each tank's dimensions is identical with the rest, as follows: Diameter, 114 feet, 6 inches; Depth, 30 feet. They will be equipped with gas-tight steel roofs, supported upon a structural steel frame. The gas-tight feature is owing to the lightness of the oil, which gasifies quickly, being the light oil produced by the California Oilfields, Ltd. The order for the ten tanks received by the Lacy Manufacturing Company calls for their completion in about five months.

Road Oil and Asphalt Men will be surprised to know that pavements are being made of GLASS in France. In the city of Lyons there are a number of streets paved with glass blocks which fit together in such a manner as to be watertight, it being claimed that no water runs down between the blocks. The government of Lyons claims that the new pavement is not only superior to any they have ever had, but cheaper, costing less than granite blocks; also that the glass blocks withstand pressure better than stone, and that they are not such great conductors of heat as stone. Whether or not they are superior to asphalt is something that remains to be discovered; at any rate it need not worry asphalt manufacturers HERE.

Independent Agency sold its entire November output and made net return to members of 36 1-2 cents. A better price is anticipated for the December output.

"Oil Production Methods"

Book Written By Paine and Stroud An Excellent, Practical and Thorough Exposition of Present Day Usages and Scientific Management

Under the simple title "Oil Production Methods," Paul M. Paine, assistant superintendent of the Honolulu Consolidated Oil Company, and "Ben" K. Stroud, formerly superintendent of the Monte Cristo, but now holding down a similar position with the Universal Oil Company, have jointly produced by far the finest practical discussion of this subject that has ever been published—a pretty strong statement, but one we believe every engineer, oil company president or field superintendent will be willing to endorse after giving the book a half-hour's study. The fact is, "Oil Production Methods" is one of the best practical text books on the oil production business in general, that it would be possible to get up.

Readers of the Derrick know we are not given to over-praising anything. Therefore the above praise will stand some backing. The best "backing" is the book itself. Next to this, a description. Our description must necessarily be limited, but the following will suffice to give the main features of Paine and Stroud's excellent work.

The first chapter treats of the distribution, properties and uses of petroleum, going into history to as far back as 2000 B. C., for first references, in the opening paragraph, thence to the drilling of Col. Drake's well and the location of the known oilfields in the United States. The customary unit of volume, the barrel, is discussed, and a conversion table gives approximate relative values, while America's output from 1859 to 1912, is given (1912 not included) and then the subject of production methods is entered into. These include the boring of a well by turning an auger in the ground; driven wells, where the method consists of pounding the pipe; churning, or "free-falling tool method;" Canadian "Pole-tool" system; then the Standard and rotary systems. The intelligent, plain treatment of the subject forms a noteworthy contrast to the painful style of literature which "experts" generally indulge in * * * * The uses of petroleum are discussed and a table given showing specific gravities of typical oils, also the method for converting degrees Beame to specific gravity, which is only one of a great number of practical helps occurring throughout the pages of the book.

Petroleum geology is given 26 pages, all of which is about the most interesting of its kind that we have run across. The discussion is always sane and pointed. Excellent illustrations, 23 in number, go with the text, which gives not only elementary facts, but those with which practically every driller has to deal. Incidentally it might be mentioned that the writers lean to the organic theory of origin. Their discussion of stratification, anticlines and synclines, surface and underground contours and how to locate wells as a result of any of the various conditions discussed, is very good stuff. Considerable attention is paid to the necessity of a good log, giving illustrations.

"Rigs and Equipment" go very much into detail, so that the average carpenter could almost put together the various rigs described. Every piece of machinery, wooden or iron, that goes to make up the complete

drilling rig, is discussed and illustrated by actual photographs of the ordinary pieces used; the reader gets an insight that it would take a great deal of experience in the field to acquire. Construction of drilling lines; makes of casing; casing shoes; pressures the casings will withstand, etc., are minutely discussed.

"Drilling Methods," a chapter of 44 pages in length and profusely illustrated, is, in our opinion, the best exposition of up-to-date drilling in existence. The cuts of the tools shown are about the best we have yet seen, and virtually every necessary tool in general use in getting down a California well is described in this chapter. Of the 44 pages, 16 are devoted to discussion and illustration of the rotary. To be appreciated this must be read.

The chapter on "The Exclusion of Water From Oil Sands" is a brief but masterly treatise, detailing methods for shutting off the water, intrusion of which into the oil sands the authors characterize as "the most serious problem connected with the life of the wells in the older fields." The discussion of the various methods of cementing is particularly valuable. It is possible the "Derrick" may secure the use of this chapter for publication in a later issue.

The discussion of "Production" includes the handling of flowing wells, intermittent flowing wells, the securing of an artificial flow by agitation, pumping, with all the appliances ordinarily pertaining thereto; "multiple pumping," the use of compressed air, perforating, shooting wells, dehydrating the oil after production, handling in the manner to secure best results, and finally, the use of gas traps. This is the star chapter of the book. It is profusely illustrated and occupies 32 pages.

The chapter on "Fishing Tools and Methods" is by all odds the most thorough exposition of the subject we have ever read.

The book is remarkable for its clear, explicit language, the illustrations of the conditions and tools discussed, its minuteness, yet freedom of tediousness, so that the reader is getting something every minute.

Chapter VIII, "Accounting Systems," follows natur-

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ally in the wake of so well arranged a volume as "Oil Production Methods," because, after the oil is once produced, if there is no strict accounting of expenditures, no accurate, dependable means of getting at profit and loss, the oil had better have been left in the ground for a well managed corporation to produce. Introducing their chapter on "Accounting Systems" the authors say:

"The oil industry on the Pacific Coast is young, consequently much experimenting has been done in the way of accounting systems for oil companies. It is only during the last few years that operators have realized the importance of efficient accounting systems whereby a check can be kept upon operations, and monthly exhibits obtained showing results in concise form. Many companies at present have systems burdened with detail, and either a proper answer is not obtained or else the results do not justify the effort. Too often there is a duplication of work at the field and main office. With a properly arranged system the entire details should be handled at the base of operations, which is the field, and information transmitted to the main office in consolidated form, so that results are easily obtained and no duplication of work is necessary. This can all be done without affecting control by the main office upon the operations at the field, and at the same time it provides for a complete check on the detailed accounting." This paragraph tells the purpose and contents of the chapter without going into detail, which we are unable to do.

But the book, as a whole, which is 240 pages of valu-

able matter, cloth bound, and beautifully printed, we highly recommend to those practically interested in the oil fields of California. The "Derrick" thinks so highly of "Oil Production Methods" that we are, for the first time, going to handle another book than our own. Those desirous of further particulars will find them on another page.

WANTED—Soon after January 1, 1914, a competent experienced, thoroughly reliable man, qualified in every way to look after and check up oil production in an established field. **Must** have A-No. 1 references as to **ability, honesty and experience**, and able to hustle. Permanent position assured to the right party. Salary secondary consideration. Address—A. B. C., care of Los Angeles Stock Exchange, Los Angeles.

WANTED—Producing Property of from 20 to 160 acres by experienced operator who knows business. Outright purchase only. Lease not desired. All details of property must be made known. **TITLE MUST BE ABSOLUTELY CLEAR.** State gravity of oil, number of wells producing, number drilled, lowest cash price, lowest price on time. Give exact location of property, state whether encumbered, give as much history of operations surrounding as possible, state water conditions explicitly. Prefer San Joaquin Valley property. Address "Property," care of California Derrick, P. O. Box 1295, Station K, San Francisco, Cal.

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry.

Yes; It's 1914—for which, thank the Lord!

* * * *

A Happy Report.

There is a happy report traveling around in a very confidential and diffident way, to the effect that the Agency's next distribution will be at the rate of 38 cents per barrel. This will certainly be welcome news to Agency Companies, if true. It's about time something like this happens; 1913 is ended, and it is young, optimistic 1914 now, and surely 1914 is going to be a GOOD year to all of us. And by raising the price of the Agency companies' oil a cent and a half per barrel, the New Year starts right.

* * * *

Extraordinary Powers Are Vested In the State Railroad Commission, by two very recent decisions of the Supreme Court of California, the first rendered of which decisions says the Commission is given plenary powers for regulating the utilities of California under a power expressly given the Legislature in the Constitution, to give to the Commission at its discretion, and which power has been granted by the Legislature, the court's decision thus being of a definitive character. The remarkable point in the decision, however, is the declaration that **the Commission's decisions are not subject to review or question by any court of California**; that "the reasonableness or unreasonableness of orders and decrees issued by the Railroad Commission may not be inquired into by any court in the State, and is, therefore, a matter for federal cognizance only." It will thus be seen that for the first time in California's history, **the law is the law**. What the Legislature decrees is not to be nullified by a court decision except it be a federal court. The Supreme Court's decision awards to the Railroad Commission the power of Eminent Do-

main and of determining awards without the intervention of a jury. The court sums up its finding in the following words:

"We regard the conclusion as inevitable that the constitution of this state in unmistakable language created a Commission having control of public utilities of the state and has authorized the legislature to confer on that Commission such powers as it may see fit, even to the destruction of safeguards, privileges and immunities guaranteed by the constitution to all other kinds of property and its owners.

"It is perhaps the first instance where a constitution itself has declared that a legislative enactment shall be supreme over all constitutional provisions."

The Supreme Court's second important decision of recent date, which may affect oil shipment rates, is that confirming the Commission's stand that it **possessed the power to regulate rates between two California ports**, covering a transaction in domestic commerce, even though the vessel is engaging in foreign commerce between its two extreme termini.

The State Railroad Commission as now constituted, derives its powers from the Public Utilities Act—one of the most far-reaching acts passed by any American legislature and one which may have a profound effect upon all legislation in this country, since the Commission idea appears to be gaining strength and popularity from one end of the country to the other.

Incidentally it is to be noted that the Supreme Court of California has not attempted to arrogate unto itself the power to determine the "reasonableness or unreasonableness" of the Legislature's Acts. How the times do change!

* * * *

Unique Discrepancies that Have No Bad Effect.

A matter of interest to all statisticians, to oil operators and even to those interested in the oil industry only in a general manner, is the discrepancy in the various statistics purporting to show the **exact** conditions in every field, and totals. The collectors of the statistics themselves must allow a shadow of a smile to steal over their faces at times, to see the millions of differences (each difference a barrel-ful of oil) in their estimates. Not in public; merey no! Their figures are the **ONLY CORRECT** figures, down to a quarter of a barrel! But on the side—when alone, they must grin just a little when they think of the differences in the estimate of the California State Mining Bureau, the United States Geological Survey, the figures given out by the Agency and the figures compiled by the Standard! All different, every one of them. So that it is a little baffling to come to any set conclusion other than that the output must be something above the lowest and below the highest range of figures given. This is spoken not as a criticism, but as a matter of fact that we all recognize at one time or another, and that most of us ponder over, with, perhaps, the before-mentioned smile. Anyway, we can all be fairly certain that California's production for 1913 wasn't a bit lower than ninety-four million barrels, and the figures we publish, those of the Standard, whom we believe have every facility for getting accuracy, will show an output close to 98,000,000 barrels. And as for 1914, we expect even the survey's figures will credit California 100,000,000 barrels!

* * * *

Panama Canal will be opened in January, the newspapers say. We say, **California is ready**, the more prosperity the better.

The New Steel Tanker "Richmond," Greatest and Best Equipped Oil Carrier on the Pacific Coast, Now Delivering Standard Oil



(Cut by courtesy Standard Oil Co.)

It was a proud moment for the officials of the Standard Oil Company of California when their splendid, new oil carrier "Richmond", shown above, steamed through the Golden Gate just before Christmas. This was her maiden voyage, and began at Quincy, Mass., quite a long trial trip. As oil carriers go, the Richmond is a beautiful ship, 436 1-2 feet long, 54 feet beam, 26.4 feet loaded draft. She is of steel construction throughout, and is fitted to carry not only bulk oil, but other cargoes as well. In addition to 750 tons of oil fuel for

her own propulsion the "Richmond" can carry a cargo of 2,250,000 gallons, or approximately 60,000 barrels of oil, including her own fuel. She is a single screw vessel, machinery placed well aft. The "Dahl" mechanical oil burning system fires the "Richmond."

The new carrier has every convenience for officers and crew and is the pride of the Standard fleet. She is by all odds the finest specimen of oil carrier ever seen on this coast. It takes confidence to build boats like the "Richmond."

Speaking of the recent trip through the oilfields of the Czar of Russia's Engineer of the Imperial Bureau of Commerce and Industry, we desire to remark that His Royal Highness' emissary did like the rest of the notables—SUBSCRIBED FOR THE DERRICK. That's the kind of people the "Derrick" goes to; the intelligent ones, who amount to something. Are you among them? Or just a library reader? It's never too late to mend. Also, a word to the wise is sufficient. Subscription blank on another page.

California Production For and Field Operations During November, 1913

There was a gain of 10,000 barrels per day in the November output, over the October daily average production.

California's total production during the first eleven months of 1913 amounted to 89,718,855 barrels of oil.

Total consumption, or shipments, for the same period,

amounted to 88,322,079 barrels, a little less than 1,400,000 barrels smaller consumption than output.

Total stocks on hand amounted on December 1st to 47,786,439 barrels. All the other details are given in the regular table following:

	New Rigs	Comp'd Rigs	Dr'g Mo.	Prod'g	Prod. Daily
Kern River		3		1382	18,090
McKittrick				260	11,434
Midway and Sunset	11	113	14	1177	120,474
Lost Hills and Belridge	7	20	8	180	15,464
Coalinga	3	40	4	870	45,942
Lompoc and Santa Maria		9		222	13,255
Ventura County and Newhall...	3	27	2	403	2,798
Los Angeles and Salt Lake		7	3	683	6,846
Whittier-Fullerton	2	71	2	506	38,717
Summerland				122	170
Watsonville				5	75
Salinas Valley		1			
Total	26	291	33	5,810	273,265

Eighteen wells were abandoned during November, as follows: 1 each in Midway, Lost Hills and Coalinga, and 15 in Los Angeles and Salt Lake.

Company and Field Reports

Union Oil Company's Immense Growth Prevents Dividends — President Lyman Stewart's Annual Report in Full

President Lyman Stewart's annual letter to shareholders of the Union Oil Company explains to them an anomalous condition that of a Company which is so prosperous that it cannot, because of its very prosperity, pay dividends at this time. The Company's business has grown so fast that all its spare earnings have had to be devoted to increasing the facilities to handle it. We don't believe we can do better than present the letter itself, so that each reader can see for himself what a remarkable condition exists; for despite the no less than phenomenal prosperity of Company its shares have been selling recently in Los Angeles for as low as \$48.50 and around \$50 and \$52, although since the President's letter the prices have advanced to \$57-\$59. If the option on the control of the Union is allowed to lapse, which the Derrick profoundly hopes will be the case, the stock will advance again to somewhere near its proper value. In the meantime, it will undoubtedly advance much higher than at present, inasmuch as a disbursement at the rate of not less than four per cent is promised for next July. Following is President Stewart's letter:

In accordance with the action of the Board of Directors of the company at today's meeting, I have to announce that the dividend for January will be passed, and that no dividend will be paid until July, 1914, at which time dividends will be resumed on a minimum basis of four per cent per annum.

It is recognized that the suspension or reduction of dividends, even temporarily, in a corporation whose shares are widely held can but work hardship upon many. Consolation may be found in the fact, in our case, the suspension will be for but a very short period; that it is not due to losses or to any falling off in earnings, and that, when resumed, we may all confidently look forward to increases in the rate of dividends within a year, or two years at most.

The situation has been chiefly brought about by too much prosperity. The volume of the company's business has doubled in four years, with no corresponding increase in capital stock—growing by leaps and bounds year after year from \$10,000,000 gross sales on a capital of \$30,000,000 to \$20,000,000 in 1913 on a capital of \$32,000,000. This great flow of new business has required each year millions of dollars for fixed investments in oil lands, drilling operations, pipe lines, storage equipment, ships, manufacturing facilities and new stations.

As but a small part of the money necessary has been obtained through the sale of treasury stock, the requisite funds could only be obtained through earnings kept in the business, and through borrowing. A fixed dividend rate of sixty cents monthly was maintained absorbing three-fourths of the net earnings. On a sta-

tionary volume of business, or on a business of slow growth, this would have left sufficient earnings remaining in the business to provide for its needs.

In our case much more was required, and this was obtained through the sale of bonds, debenture notes, and by floating debts. General financial conditions have not been good for more than a year past, and it became necessary to provide for extensive liquidation as well as for the continuing demands of the growing business. This has been accomplished with the maximum of results the minimum of hardship for our stockholders.

At this date, the entire outstanding bonded indebtedness and serial note obligations in the hands of the public are as follows, including both the direct bonded debt of the Union Oil Company of California, its wholly owned and its controlled companies guaranteed by it:

Union Oil Company of California, First Lien	
Bonds	\$ 5,692,000
Mission Trans. and Refg. Co. Bonds.....	435,000
Union Trans. Co. bonds	2,044,000
Union Steamship Co. bonds	250,000
Prod. Trans. Co. bonds.....	1,926,000
Union Oil Co. of Cal. Serial Gold Notes	2,306,000
Total	\$12,653,000

The properties securing these various issues have a minimum of at least, five times the indebtedness while the net earnings available for interest charges is from six to eight times the charge. We believe there is no large corporation in the United States where the security of the bondholder is so great, whether from the standpoint of the safety of his principal or the certainty of his interest.

By referring to the annual report for the year ended December 31, 1912, stockholders may note for themselves the results achieved during the present year in the face of static financial condition in the country as a whole; in the face of an augmenting business requiring more than a million dollars additional investment. Gross sales for 1913 will show an increase of about \$3,000,000 over 1912. It is believed net earnings will be larger than in 1912 despite some unfavorable factors in the summer just past.

During the year 1914, about \$1,750,000 will be required for sinking fund purposes and the serial note retirement; about \$1,250,000 will be needed for further equipment if the business continues to grow in the same ratio as for the past four years. The floating debt, which has been reduced during the year just closing to normal proportions, will be still further reduced as a safeguard against contingencies.

Messrs. Price, Waterhouse and company, the chartered accountants, are already engaged in verifying the records of the company, preparatory to their annual audit.

As soon after December 31st as possible, the audit report will be rendered, and detailed figures of the year's operations and complete balance sheet will be available.

With no dividends until July of next year, it will then be safe and proper to commence dividends on a

minimum basis, gradually increasing until dividend disbursements equal half the ascertained net earnings. So long as the business continues to grow at the rate of the last four years, half the earnings will be needed to care for the increased trade, unless general conditions should become favorable to a re-financing or to the sale of treasury notes.

The iron logic of indisputable facts, therefore, should give us all cause for gratitude, and make us content to bear a momentary discomfort with cheerfulness.

General Petroleum Negotiations are still being carried on, not now in London, but in Los Angeles, where Messrs. Andrew Weir and Tilden Smith, who are the British backers of the Western Ocean Syndicate, Ltd., the "holding company" purchasing General Petroleum, are in constant consultation with Captain John Barneson and Eugene de Sabla, of the General Petroleum Company. The British representatives of the holding company have been in California for the last several weeks and reports from Los Angeles are sent up to the papers in this city every day or so about the negotiations, most of them not jibing very well with each other, possibly due to the ignorance of the average newspaper reporter on the subject, and its importance to the many shareholders. The Derrick has been unable to elicit any information here, excepting the bare fact that "negotiations are in progress in Los Angeles dealing with the matter in hand." Also, that "We are unable to say anything here at present; all information credited with coming from here is not coming by a long shot." Absolutely ludicrous reports have been circulated here to the effect that the option held by the General Petroleum Company on the Union Oil Company control "which is to expire Dec. 31, 1913," had not been exercised, whereas everyone knows that the option is not due to expire until January 1, 1915, so that there is plenty of time to exercise the option if the purchasers or financiers of General Petroleum have the money and desire to exercise it in the purchase of the Union. The balderdash that has been written passeth all understanding. The Oil World, to turn to the Oil Press, states that the Western Ocean Syndicate, Ltd., will absorb the General Petroleum Company through its subsidiary, General Petroleum Company, Ltd., 1F 51 per cent of the stock and bond holders of General Petroleum of California, turn in their securities in exchange for General Petroleum, Ltd., the subsidiary of the Western Ocean Syndicate, by March 31, 1914; that the basis for exchange is "£3 in ordinary shares of the English company for \$100. par in General Petroleum."

Concerning the English exercising the option on the control of Union Oil Company, now held by General Petroleum of California, there is plenty of time for worry when control of the latter corporation itself has been secured.

Thirteen Million Dollars, round numbers, is the estimated dividends of all California Oil Companies for the year 1913, five millions of this being disbursed by Standard Oil of California. The "Derrick" had no idea that as much as \$7,000,000.00 additional had been paid during this last year. It makes 1913 look like a very prosperous annum.

Steamer President of the Pacific Coast S. S. Co. is to be transformed into an oil burner.

CALIFORNIA CONCENTRATES

John M. Keith positively assures us that he IS running the Spreckles Oil Company. No statement that he had "taken over" the company has ever appeared in the "Derrick."

Dutch-Shell Refinery has not yet been purchased, contracted for or a site selected, as far as known to us.

Mays Consolidated Oil Co. is reported to have contracted with General Petroleum for the delivery of 2,000,000 barrels of oil. Mays rate of production is 65,000 barrels per month. Price is presumed to be about average for this grade of oil.

North American Consolidated, Midway, has completed construction of two topping plants, one of 2500 and the other of 1500 barrels daily capacity.

Hazleton Crude Oil Co. has struck it in their No. 1 well on 17, 11-23, Maricopa Flat.

Reward Oil Co. has signed a contract with the Standard for the sale of 1,000,000 barrels at 35 cents per barrel; in other words, a \$350,000 contract.

Seaboard Oil & Transit Co. recently issued a very optimistic report to its shareholders, giving the amount of money raised by the recent assessment, stating that the arrangements had been made to permit delinquents to redeem their shares, and generally corroborating the advance data secured by this paper from other sources.

Obispo Oil Co., Maricopa Flat, section 32, 12-23, brought in a very large well December 22; oil high grade and initial flow estimated at 8000 barrels per day, through a 3-inch pipe.

Burned Out, the Pacific States Refineries plant in Fruitvale, on the estuary, opposite Alameda, loss heavy, insurance said to be light. Very regrettable, but one of those apparently unavoidable calamities that will come. It is said a sale of plant and business was just about to be closed when the fire wiped them out.

The Oil Well Supply Company's new all steel rotary is said to be a "Humdinger," making a hole faster than anything yet—which is "going some." More particulars later.

California-Oklahoma Oil Co., operating land adjoining Monte Cristo in La Habra Valley, is reported to have oil at 2910 feet.

General Petroleum's well No. 5, on 4, 27-21, Lost Hills, has been flowing 800 barrels daily regularly for some time past.

San Francisco Chamber of Commerce has written a letter to the Chief Quartermaster of the United States Army urging the conversion of Army Transports from coal to oil burners, pointing out the saving to be realized by the change.

Montebello Oil Co. will install gas compressor to squeeze gasoline from 800,000 c. f. of gas daily. Thus grow the profits as economy comes in.

Standard Oil of California's shares have advanced \$100 in less than 100 days. Par value is \$100, present quotations \$287-289. The public apparently has confidence in the Standard.

Interesting Developments of Recent Date

Col. Timothy Spellacy has prepared and forwarded to Franklin K. Lane, Secretary of Interior, a carefully worked out set of plans, or rather, one harmonious arrangement for the regulation of leasing the Osage Indian Reservation oil lands. This plan is one of the most unique and apparently just that could be conceived and it may be possible for the Derrick to publish it in the January number.

Standard Oil is to have a new distributing station in Eureka in the early future, plans having been filed for same. Cost reported as \$50,000.

Petroleum Co., of which M. H. Moser is president, has just cemented well No. 5 at 3600 feet depth.

Consolidated Midway-U. S. Government "test case," wherein the legality of Ex-President Taft's withdrawal order of Sept. 27, 1909, is to be decided, will come up early in the month of January, if according to schedule.

Montebello Oil Co., Ventura County, is now producing about 50,000 barrels of high grade oil monthly.

Complete 1913 Exports will soon be available for publication—probably by February 5-10.

Brea Canyon Oil Co. expects to bring in well No. 11-a, southeast of the Birch gusher, California's most profitable well, in the near future, as the drill has penetrated several hundred feet of very promising oil sand.

Texas Petroleum Company's well, (Prospect hole,) is now almost 2000 feet deep, according to advices here in this city.

Arthur H. Blanchard, Columbia University, a member of the American Soc. C. E. and Professor in Charge of the Graduate Course in Highway Engineering at Columbia, recently delivered an illustrated lecture on "Modern Developments in Highway Engineering" before the Drexel Institute of Philadelphia.

Combined Oil Co.'s well No. 6 is being drilled in record time. The hole was started December 16th and on December 31 there was 940 feet of ten-inch casing in it; a drilling average of 67 feet daily; this with cable tools, thus rivalling the rotary for speed. A little surface water was shnt off with 12 1-2 inch casing, of which there is 240 feet in the hole. The well is now being finished with 6 1-4-inch, 100-mesh strainer pipe, in 200 feet of oil sand. An initial production of at least 250 barrels per day is looked for. This will probably settle down to 100 barrels as a steady daily job. The Combined's December shipments amounted to 7,900 barrels net; Company is an Agency member. It is expected the January shipments will be between 10,000 and 12,500 barrels. Wilbur Dean, the president of the Company, says that the assessment work is now a thing of the past. A complete audit of the Company's books is now being made and the annual report, being compiled, will give the shareholders details of expenditures, etc., to the last cent. This report will probably be issued inside the next thirty days.

Dinners Given by the Chamber of Mines and Oil, the Sierra Madre Club and the Southern California Sections of the American Chemical Society and the American Institute of Mining Engineers, in Los Angeles on December 16 and 19, were primarily in honor of

Dr. Irving C. Allen and Dr. Charles E. Van Barneveld, and for the purpose of learning from them the plans of the U. S. Bureau of Mines, and of the Exposition Company in regard to the Oil Exhibition. About seventy-five interested members of the various societies were present at the meeting in which Dr. Chas. E. Van Barneveld outlined the Exposition Company's plans for a Petroleum Exhibition; which plans the Doctor said will be more matured about the first of February, so that he does not care to have more publicity given the address presented before the societies, at this time, but will give the Derrick an article, or data for our own preparation, about that time. The plan outlined was that of a mountain on one side of which would be conducted mining operations, showing various kinds of formations, and kinds of mining; and on the other side the Petroleum Exhibition, the estimated cost of which he placed at \$125,000. No plans have yet been matured for financing the exhibition. Also, its main idea is subject to considerable changes. The meetings were both successful, but more outside interest would have been appreciated by those working to make the Petroleum Exhibit a big success. This was doubtless due to the season of the year, when business is very compelling and the holidays loom up as the Most Important Thing in the World.

The Department of Mines and Metallurgy of the Panama-Pacific Exposition has been assured of the co-operation of the United States Geological Survey and the U. S. Bureau of Mines in preparing the finest technological exhibition at the Exposition, that has ever been assembled.

Dr. Van Barneveld says that what the Exposition Company needs most at present to assure the success of the exhibit is the active support and co-operation of the oil men of this State.

Dividend Notice—The German Savings and Loan Society—(The German Bank)—526 California street, San Francisco—For the half year ending December 31, 1913, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Friday, January 2, 1914. Dividends not called for are added to the deposit account and earn dividends from January 1, 1914.

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THE STOCK MARKET

San Francisco Quotations

The year closed quietly as far as transactions on the local exchange are concerned. Union made a gain of nearly \$10 per share, or about 15 per cent, during the last week of the year, due to President Stewart's letter to shareholders. Associated climbed a couple of dollars, from \$38.50 to \$40.50-\$41, ruling higher in Los Angeles. Fullerton Oil, also, has climbed. Turner has advanced 15 cents. There has been an easing off in the bids for quite a few, declines attributable only to the holiday season. Following are the latest San Francisco quotations:

COMPANY	BID	ASKED
Associated Oil Stock	\$ 40 37½	\$ 41 00
Brookshire	25	
Caribou	1 25	
Claremont		25
Coalinga Central	20	
Coalinga Mohawk	67	
Illinois Crude	01	02
Maricopa National		17
Maricopa 36	32	
Monte Cristo	81	
National Pacific		05
Pacific States Petroleum		15
Paraffine	25	
Palmer Union	01	02
Pyramid		04
Republic	15	
Sovereign	08	
Sterling		1 25
Sunset Monarch		1 00
Traders	20 00	20 00
Turner	2 25	
United Oil	11	
Wolverine	85	1 00
W. K. Oil Co.	35	

Los Angeles Quotations

As usual, Los Angeles shows a very lively interest in

oil, as seen by the price list following:

COMPANY	BID	ASKED
Amalgamated Oil	\$ 74 00	\$ 75 00
Associated Oil	41 50	42 25
Calif Midway Oil Co.	04	06
Central	25	80
Columbia		80
Continental Oil		10
Enos Oil Co.		05
Euclid Oil Co.		10
Fullerton Oil	2 75	3 75
Globe		03
Jade Oil Co.	04	07
Maricopa Northern	067½	07
Mascot Oil Co.	38	
Midway Northern	12½	22
National Pacific Oil Co.	04½	04½
Olinda Land Co. (Oil)	30	
Rice Ranch Oil Co.	99	1 05
Union	57 12½	58 25
Union Provident Co.	68 00	
United Petroleum	68 00	
United Oil Co.	12½	
West Coast Oil, Pfd	83 00	97 00
Western Union	65 00	85 00

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Vol 6

San Francisco, Cal., January, 1915.

(Issued Feb. 10)

No. 6

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Nineteen-Thirteen and Nineteen-Fourteen

Review and Comment by the Derrick's Editor

The Annual Statistics published in this issue, tell their own story. The intelligent readers of the Derrick will experience no difficulty in obtaining all the material facts desirable. Two matters, however, deserve especial mention. These are, first, the changes in the method of presentation which the Standard Oil Company instituted with the presentation of the August statistics, grouping adjacent fields and cutting out much of the detailed information given up to that time, so that quite a variation in the figures was apparent, although the totals are, of course, the same as though presented in the former detail; second, subscribers who are interested in determining the exact figures for any district during any particular month can turn to the back issues and find what they wish.

Expansion was the dominant note of 1913. Standard Oil expanded remarkably in every division of the business. Union Oil's sales expanded phenomenally. General Petroleum increased its business in every direction. Shell-Dutch gained a firm foothold through the purchase of the California Oilfields, Ltd., Turner, Mohawk and W. K. Oil Companies, the erection of tankage following.

In the legislative field, the Common Carrier laws were passed and the Standard Oil Company elected to come under their provisions, if they are found constitutional, while the Government's suit against the Southern Pacific furnished amusement and disgust alternately throughout the year, still hanging fire. The big legal and public question of the day and of the past four years, in fact, is the legality of the Presidential withdrawal order of September 27, 1909. During the past year other withdrawals have effected a considerable stoppage in prospecting and have also tended to disquiet operators who believed their property was in no way liable to be jumped either by the Government or individuals.

In field work the Fullerton and Midway districts furnished the "sensations" of the year in the development of big wells.

Hard Year on Small Companies

And last, we feel impelled to add, the year was an

extremely hard one on the majority of the smaller companies and on shareholders generally. Prices of 30 cents were not conducive to development, or even payment of bills, let alone dividends, hence assessments, discontinuance of dividend payments, and in no few instances, complete failure. But with the return of the Standard as a purchaser of low gravity oil, at 40 cents per barrel, and consumption neck-and-neck with production, and both gaining like wildfire, and with the new market of which the opening of the Canal will avail us almost at hand, Nineteen Fourteen opens auspiciously indeed.

* * * *

The gates of admittance to the Elysian fields of Great Prosperity have opened to the California Oil Industry. This may be flowery talk, but it is prompted by glowing facts that 1914 has already given birth to. Standard Oil has raised the price for all oil from 14 degrees up to 20.9 degrees gravity, to forty cents per barrel. It's enough of an indication of what is yet to come to make producers cheer up a little, after the long period of depression. Consumption in 1914 was less than a million barrels behind production. California is producing 40.5 per cent of America's output today, according to the Geological Survey's preliminary report. The great bulk of this oil is consumed right here on this Coast. Our exports are increasing with tremendous rapidity and the canal is yet to be opened.

Everything points to unprecedented prosperity. The Derrick believes that when the canal is opened and the eastern and European ships can get our oil and derivative products, it will take every drill in the State, going twenty-four hours daily to supply the demand. In fact, the outlook is, or appears to us to be, that it will be a big problem to produce the quantity that will be demanded. Unprecedented prosperity! It's in the very air!

The "Derrick" respectfully calls your attention to its merits as an exponent of the California Oil Industry and earnestly solicits your subscription. A blank for your use is printed on page 16 of this number.

neath them; pipes furnished with stop-cocks letting it on to the fires in jets in such quantities as are required. The petroleum would be still better adapted for this application and would go much further than an equal weight of solid fuel, if suitable apparatus was provided for supplying it under the steam boilers. The fires thus kept up would be far more manageable than those of coal and involve no waste by unnecessary combustion.

"It is expected, that so soon as petroleum can be cheaply introduced into San Francisco and the other cities of California it will be applied to the manufacture of illuminating gas, which, owing to the enormous prices of the bituminous coals now used for this purpose, is afforded only at the most extraordinary rates. As long ago as 1860, the price of gas at San Francisco was \$8.00 per 1000 cubic feet; at Marysville, \$12.50; and at Stockton and Sacramento \$10.00. At the present time bituminous coal being worth about \$22.00 per ton in gold in San Francisco, the price in specie of gas is said to be \$12.50.

"Refined petroleum furnished from New York generally brings about the same price in gold which it sells for at the same time on the Atlantic, in currency. When afforded at the low rates at which it can be introduced from Santa Barbara, if not applied to the manufacture of gas, it must certainly materially reduce its consumption.

"Extract from the report signed by B. Silliman, Jr., dated September 2nd, 1864:

"Considerations Affecting the Value of Oil Properties As Compared With Other Mining Adventures."

"In all mining for metals there is unavoidably much capital put in peril before successful results are attained. Shafts must be sunk, adits, tunnels, and galleries be driven; hoisting, pumping and other machinery constructed, and when all is done, the daily product is attained only as the fruit of a large amount of human labor of a costly description. It is only therefore, the smallest number of all mining enterprises which succeed. In oil wells the prime cost of the property is usually small; the wells, being bored at a cost of say \$1000 to \$5000 each—there is virtually an end of expense. Nature supplies the power which gives free course to the flow of these perennial fountains. Man has only to provide receiving vessels and transportation. Even the latter element of cost, may in the present case be avoided, in a great degree, since pipes can be laid down from the reservoirs of storage to the sea, at less cost than roads can be built; no winter frosts disturb the ground or congeal the product, and gravity replaces animal power.

"Again, every mine of metals is a magazine of limited supply—you own so many feet, and this area contains so much and no more—every dollar's worth of ore mined and sent away leaves one dollar less in store. Not so with petroleum. It flows on year after year, and still the source of supply seems unimpaired; no conflicting claimants can arrest its flow, and like the widow's cruise, the daily modicum is never wanting.

The value of these considerations can be readily appreciated.

"On The Use of Petroleum as Fuel"

"Experiments have been made during the past year to demonstrate the value of petroleum as a substitute for coal in raising steam at sea. The U. S. Navy has caused trials to be made to prove its value and I am assured with encouraging results, but have not, owing to my absence during the past six months from my usual

sources of information, seen the report in detail. I mention this subject that it may be inquired into, since the use here indicated is one of the highest moment for the Pacific Coast where good steam fuel for marine use is extremely scarce and costly in proportion. Its use for the navigations of streams where there is no wood, and for even those desert situations where valuable mines lie dormant for want of fuel, may be of the highest moment. It is now possible to conceive that we may so modify roasting furnaces as to allow the use of petroleum in place of wood or coal, if its production on the Pacific Coast should equal in abundance its present promise."

The foregoing statements, written just fifty years ago are certainly most interesting in making comparison with the present production of petroleum in California and particularly in Santa Barbara County. It is assuredly a "far cry" from the statement made in this report—that in 1862 Mr. Gilbert "drew the crude oil chiefly from one of the great wells from which he obtained 400 barrels without apparently diminishing the supply," to one of the great gushers in the Santa Barbara County field that has produced 10,000 barrels per day for many months. Certainly the prophecies made in 1864, in the article from which the writer just quoted, have been more than justified in the developments of what is known as The Santa Maria Oil Fields in Santa Barbara County now producing nearly six million barrels of oil yearly, with the average production of the wells in the Santa Maria district over 160 barrels per day as against a general average of production of the oil wells of California of 40 barrels per day, making the average production per well of the Santa Maria field nearly four times the average production per well of the state as a whole.

Santa Maria Thus Far Little Known or Appreciated

The Santa Maria field is but little known and appreciated by the outside world, being almost a "hermit kingdom," owing to its comparative isolation, being just half way between Los Angeles and San Francisco, and comparatively few people visit the field or know of its great richness and extent.

Santa Maria Unique Among State's Oil Fields

The Santa Maria field is unique in many respects, combining as it does within its area, practically all grades and gravities of oil from eight degrees to forty degrees Beaume, thus producing the purest and highest quality of oil for fuel and asphalt purposes, as well as for refining.

Its Advantageous Position

Moreover, its accessibility to the sea and its splendid transportation facilities by reason of pipe lines of the Union Oil Company, Independent Producers Agency, Associated Oil Co. and The Standard Oil Company to the excellent shipping ports of San Luis Obispo and Gaviota; also the rail transportation facilities of the Pacific Coast Railroad Co., that run directly from the oil fields to the wharf at San Luis Obispo, permit the loading of the deepest draught ships at this port, all combining to make the most attractive field for the development of the oil industry in the state of California, and the prophecies of the early pioneers in respect to this great oil producing territory have been much more than fulfilled, while the development of the facilities of the Santa Maria field has been largely handicapped by the lack of outside capital coming into the business owing to its comparative isolation, and the outside world

but little understanding the superior advantages possessed by the field.

Depth of Wells Has Retarded Development

The field has also been handicapped possibly from the fact that the wells in this field generally are of considerable depth, averaging about 3000 feet, and are therefore more expensive to drill, but this first cost, on the other hand, is more than compensated by the great length of life of the wells, many of the wells maintaining a steady production of hundreds of barrels per day for many years and without any apparent diminution in the daily production. In fact, the wells in the Santa Maria district show less variation in this regard than any other field in the state, approaching in this respect the long-lived producers of the great oil fields of the Baku district in Russia. Sooner or later these facts will become known to the world and outside capital will flow into this field, making it one of the longest lived and most productive oil fields in the United States or of the world.

Field Now Receiving Attention

The attention of foreign capital has recently been attracted to this field and quite a number of English and foreign investors and engineers have visited the section, looking toward the acquirement of properties. All experts who have visited the field have been strongly impressed with the great depth and the heavy saturation of the oil sands and the long life of the wells; also the remarkable purity of the oil.

The Big Market Available With the Canal's Opening

The growth of this field has been relatively slower than the other fields of California, owing to the reasons given above, but it is confidently believed that with the opening of the Panama Canal, bringing hundreds of ships to California ports from all over the world, that these ships needing oil for fuel and being able to transport fuel cheaply through the Panama Canal to the European markets will so increase the demand for oil as to nearly double its present price, while at the same time largely increasing the production. Contrasting the cost of coal at the high prices prevailing on the Pacific Coast, with oil at \$1.00 per bbl., at the sea, allowing three and one-half to four barrels of oil to the ton of coal, makes the cost of the best fuel in the world equivalent to \$4.00 per ton coal at the sea.

The Cunard Steamship Company pay in excess of \$5.00 per ton for the coal which they use on their Atlantic Ocean liners, and with the superior shipping facilities that will be offered by Post San Luis, the oil from Santa Maria is almost certain to command as high or higher prices than the oil from any other field in California.

The Greatest Economy Effected by Use of Oil For Fuel

Recent magazine articles have called attention to the fact that we are now entering what is to be known as the "oil age." The supremacy of oil as fuel for the operation of the great steamers and battleships of the nation has been clearly demonstrated. The steam radius of ships using oil as fuel is nearly double that of ships using coal as fuel, while the cost of operation is very much less, as oil occupies much less space than coal and is much more economically taken on board the ships and used in the boilers, avoiding the great number of "stokers" that are needed in the ships that burn coal.

Santa Maria Gas Is Rich In Gasoline

The Santa Maria field was one of the first to produce gasoline from gas; the Pinal-Dome Oil Company, The Rice Ranch and the New Pennsylvania companies being among the first to utilize the gas, which has heretofore been a waste product, by making gasoline under the compression system.

The Union Oil Company has just established a large and complete plant on their Newlove lease in this field for producing gasoline out of gas, which has for years been burned through great flaming jets, marking the presence of the oil fields.

Santa Maria Oil Superior To Any Other For Asphalt Manufacture

One of the more important respects in which the Santa Maria oil excels, is in the manufacture of asphalt; the remarkable uniformity in the quality of the "Cat Canyon" or Eastern Santa Maria field oils, makes it beyond question the best oil in the world for the manufacture of asphalt. The quality of the asphalt made out of the "Cat Canyon" oil is absolutely pure and uniform. The testing machines in a plant of the California Liquid Asphalt Company at Hadley show that the oil furnished to this company from the wells of the Palmer Union Oil Company, does not vary in the slightest degree from one month's end to the other, during the year, and the reliability and uniformity of the asphalt produced from this oil is now so generally understood and accepted by the City Engineers of the leading cities on the Pacific Coast, that it is accepted by them on its brand.

There is not a single instance where asphalt made from this oil has ever been rejected or any trouble resulting to the contractor from its use. This augurs with the opening of the Panama Canal, for a very large export trade for the Santa Maria asphalt, to England, France, Germany, Australia and all the countries of the world where "good roads" are demanded.

The oils in this field surpass any other in the state for fuel and asphalt purposes, because of their great purity and uniformity, while they are equal to any other oils in the state for refining purposes.

The Changes of Fifty Years

If one will read the statements made fifty years ago in the article from which we have just quoted, and contrast the conditions that then existed in the Petroleum Industry in Santa Barbara County, and in the State of California generally, and will realize that since that very small beginning fifty years ago, the Petroleum Industry in California has grown to the enormous proportions set forth in this issue of the California Derrick representing the investment of fully one-half billion dollars, and the value of over fifty million dollars per annum for crude oil alone, and over one hundred million dollars per annum for the refined products, and will appreciate the further fact that California has within its already proven oil fields, sufficient proven territory to continue at least the present rate of production of say one hundred million barrels per year for not less than the next fifty years, making a total value of petroleum actually in sight even under the present abnormally low prices, of over two and one-half billion dollars of value, which is over one billion dollars in excess of the total production of gold by California during the past fifty years, he will begin to appreciate the magnitude and value of California's Oil Industry. Any prophesy that might now be made, based upon the con-

ditions now existing and the proven values of the property in California, as to what will be accomplished in the next fifty years of the Petroleum Industry in California, it seems reasonable to say that the advance which we have made in this industry in California, since the article from which we have quoted was written, in 1864, will be even greater during the next fifty years, and that those who acquire an interest in the proven oil lands or proven oil properties in California, will find them become as valuable or more valuable, during the coming three decades, as the coal lands of Pennsylvania or the iron ore lands of the Mesaba Range have increased in value during the past thirty years.

With the results already achieved in this industry, and the firm foundation upon which it is now established in California, with the broadening markets of the world that will open at the completion of the Panama Canal, with the wider use of oil as fuel for the Merchant Marine and Navies of the great Nations of the world, and the use of oil as fuel in manufacturing plants for the making of gas and for turning the wheels of the great railroad transportation lines of the Pacific Coast there seems almost an illimitable market for California Petroleum and at prices and profits that will

attract the necessary capital for its development, bringing rich returns to the investors and ample reward to those who have struggled so hard during the past ten or twenty years to develop their properties and the Oil Industry to the commanding position which it has in this brief period assumed, the greatest of California's industries and the greatest oil producing territory in the world. Who, considering these facts, can see anything ahead of the Oil Industry of California except unprecedented prosperity?

(EDITOR'S NOTE: Mr. Frank L. Brown, writer of the above article, is unquestionably one of the foremost independent operators of California and one of the leading developers of the Santa Maria field. Mr. Brown has made an extraordinarily plucky fight to bring the world's attention to Santa Maria's advantages and has probably done more in this direction through the development of the Cat Canyon district of Santa Maria, of which he is the pioneer, than any other one agency. It is through the efforts of men of great energy, pluck and optimism, such as Frank L. Brown, that the California has reached its present position as the world's greatest oil country.)

The Settling Tank

State Mining Bureau's Preliminary Report No. 1, Petroleum, consisting of notes on damage by water in California oil fields, and treating directly with water condition in the Coalinga field, is a very valuable and instructive paper indeed. The paper was written by R. P. McLaughlin and were it not for the fact that this issue was planned and a good part of it compiled long before the receipt of this valuable report, it would be published in this number of the Derrick. The report can be had by writing the Mining Bureau. It is extremely valuable, detailing conditions as they ARE, troubles met with and how overcome, and suggesting further methods of improvement. As we have stated in previous issues, the Mining Bureau is doing good work; and the longer they keep at it, the better and more useful their labors become.

Industrial Accident Commission of California announces that it is utilizing the medium fixed by law to aid in making compensation insurance accessible throughout the State. The mediums are the city and county clerks and treasurers.

California State Highway Commission announces that \$5,719,500 of highway bonds have been purchased by thirty of the state's fifty-eight counties. As a result, the Commission believes it will "make possible in time for the 1915 expositions, the greater part of the coast line between San Diego and San Francisco and north to Eureka, the west Sacramento valley highway from Red Bluff to Benicia, and a considerable part of the route through the San Joaquin and Sacramento valleys between Bakersfield and Red Bluff via Fresno, Sacramento and Marysville.

U. S. Department of Agriculture has issued a bulletin on "Object-Lesson and Experimental Roads, and Bridge

Construction in 1913," which will unquestionably be of interest to asphalt manufacturers, road oil producers, highway engineers and highway commissioners.

State Mining Bureau has issued for free distribution, Bulletin 66, containing the Mining Laws of California and the U. S. Laws, and various court decisions relating to mining. In addition are included as an appendix, the full text of the Blue Sky Law and the Water Commission Act, now inoperative because of the invocation of a referendum vote. The value of this book to the prospector and operator alike, is evident. Comment is superfluous.

International Petroleum Commission of Karlsruhe, Baden, Germany, has approached the Imperial German Government with the request that it be allowed to submit to the States represented in the Commission, that the Commission be changed into an "International Petroleum Institute."

Representatives of the Hoden Oil Co. of Nagaoka, Japan, have recently toured the fields. They made quite an enjoyable stay in Santa Maria, where they were entertained at a banquet on the Palmer Union property by the management of that company.

Chinese Lubricating Trade

Lubricating Oils In China, is increasing rapidly, having grown from 1,360,472 gallons valued at \$259,980, in 1908, to 2,391,041 gallons valued at \$465,518 in 1912. About one-half of the total came from the United States, the rest being divided among various foreign countries.

Refining Petroleum from California Oils

Written Exclusively for the California Derrick by

LAIRD J. STABLEK

Professor of Chemistry, University of Southern Calif.

(Note: This article was begun last year in our April edition. The full manuscript is now in our hands and the article will be concluded in our next issue.)

STILLS

The stills vary in capacity from 100 to 500 barrels. They are constructed and set in the masonry for the purpose of manufacturing asphalt. The still must not be too large or the period of heating the still for the evaporation of the light oils will injure the quality of the asphalt. The part of the still exposed to the direct heat of the fire box should not exceed one-half of the circumference.

The still is completely covered with brickwork to prevent as much condensation of the vapors as possible.

To the flange on the dome of the still is attached one 8-inch vapor line. This vapor line leads to the condenser. The condensers are of many different types. The most common form is one in which the vapors traverse parallel pipes connected by means of elbows. These pipes are arranged in parallel coils with sufficient fall to prevent condensed fluids from choking the passage. The condensing medium is water. In distilling the California oil every effort is put forth to prevent the cracking process. In order to carry out this process the distillation is assisted by using superheated steam, which reduces the temperature at which distillation takes place and prevents scorching and cracking from the heated walls of the still. A 2-inch perforated pipe is placed in the still near the bottom, which runs the entire length of the still. This pipe supplies the steam as needed for the process of distillation. The steam comes from a boiler and is often superheated before entering the still. In some refineries air is used in the still instead of steam. The use of air increases the yield of asphalt.

FILLING THE STILL

There are different methods in practice. One method is to fill the still two-thirds full of crude oil and start a slow fire. If the oil contains a small quantity of water, the still is fired very slowly, and the valve closed at the vapor line and kept closed until the still is under a few pounds pressure. The still has a small one-inch pipe leading from its top. This pipe is connected with a crude oil tank. This pipe is called the puke line. The valve in the puke line is opened a few minutes and then closed; in this way the water vapor is removed from the still. It is necessary to remove all water from the still before the vapor line leading from the still to the condenser is opened. If distillation is attempted with water in the oil, the contents of the still will foam and practically all the oil will run from the still before fractional distillation will start.

Another process of filling the still that eliminates the difficulty of foaming is as follows: The still is filled one-fifth full of the crude oil and a slow fire is started. When the oil in the still has reached a temperature above the boiling point of water, the fire is increased under the still and the crude oil pumped in

just fast enough to constantly maintain a temperature in the still above the boiling point of water. When the still is three-fourths full of oil the pump is stopped and distillation is continued making the usual cuts at the tailhouse of gasoline, engine distillate, kerosene, stove distillate and lubricating stock. Distillation is continued until the residue remaining in the still, which is the asphalt, has reached the desired degree of hardness. The steam is slowly admitted to the still when the kerosene fraction starts to pass from the still. As the distilled products become heavier in gravity the amount of steam in the still is increased. The steam prevents cracking of the distilled oils as well as preventing the formation of carbine in the asphalt.

After the distillates have been removed the residue remaining in the still is asphalt. A small quantity of the residue, or asphalt, is drawn frequently from the still, cooled and tested by the stillman between his teeth to decide when it is brought to grade. When the stillman decides it is on grade another sample is taken, cooled and tested in the testing laboratory for the penetration.

The asphalt is drawn into a large cooling kettle filled with steam. It is necessary to fill the cooling kettle with steam to prevent the hot asphalt from taking fire when it comes in contact with the air. After the asphalt has cooled in the kettle over night it is drawn into barrels.

The asphalt is graded according to hardness. The hardness is measured by the commercial instruments in use to determine the penetration. The contents of the still must not be heated above 700 degrees F. to produce a high grade asphalt. Temperatures higher than 700 degrees F. produce a large amount of carbines. The carbines indicate a scorched asphalt.

DISTILLATES

The gravity of the distillates is taken at the tail house as the distillation process proceeds. The distillates are classified by the gravity and placed in tanks for future refining processes. The refiner usually separates the products resulting from distillation into the following:

	Still Cuts	Average Gravity
		Degrees Beaume
Gasoline	80—55	62
No. 1 Engine Distillate	55—48	50
Kerosene	48—38	42
Gas Distillate	38—28	32
Yellow Neutral or Spray Oil ...	28—24	26
Gas Engine Cylinder	24—18	22
Steam Engine Cylinder	18—15	17
Asphalt, "D" Grade		

Each of the above products, except asphalt, is carried from the tail house through a separate pipe to a storage tank. The contents of these storage tanks are removed to their respective places for further refining and treatment.

(Continued on Page 17)

California Derrick

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

Valuable and Interesting Articles

It is with pride that the Derrick calls its readers' attention to the very high class of material published in this issue. Not only is the matter itself excellent, but it differs very materially from what is found in the ordinary oil publication. The article by Professor Stabler is of unusual interest to refiners, but at the same time can be read and enjoyed by any oil man and the public generally. The article by Mr. R. F. Chevalier is so plainly and unaffectedly written that its technical contents are within the grasp of every layman. It is only due to Mr. Chevalier to state that his high standing in San Francisco as an independent consulting engineer, places his article above suspicion as a "boost" for anything he mentions, his expressed preferences being merely the result of his experience as what might be termed a "Fuel Engineer." This is the first of several articles to be written by Mr. Chevalier for this paper. Mr. Frank L. Brown's article is a straight-fact talk based on predictions made fifty years ago—predictions which were undoubtedly considered fantastic at that time. But in fifty years a great deal can happen—as it has happened—and to find out what has happened the reader must read Mr. Brown's article, which is very interesting. The Geological survey's preliminary covers American and Foreign conditions in 1913, and the Derrick's California statistics are mentioned in another paragraph.

* * * *

The Diesel Engined Ocean Going Vessel "Siam" has come and gone, having attracted extraordinary attention from all classes of people, from marine engineers, oil producers, machine men and shippers, to the crowd of ordinary humans interested in any genuine advance. The "Siam" will always be remembered on this coast as the FIRST Diesel Engined liner calling at our ports; the first to stop at San Pedro and to navigate the Golden Gate.

The "Siam" has twin propellers, driven by two sets

of Diesels, of 1600 h. p. each, and each having eight cylinders. The "Siam" uses about 70 barrels of oil per 24 hours day, and has a "steaming" radius of 58 1-2 days. It is claimed for the "Siam" that she can operate on the lower gravity of crude asphaltic oils. While at San Pedro she took on a fuel cargo of oil furnished by The General Petroleum Co., using this for the trip up the coast. Another cargo was taken aboard at this port.

The "Siam" is more than 400 feet long. She looks like an ordinary freighter, excepting that she lacks stacks. Her carrying capacity is about 20 per cent greater than that of a coal burning vessel of similar size. She has twelve electric winches for loading and discharging cargo from her six large holds. The winches derive their power, and the vessel is also lighted by a Diesel engine coupled to a 150 k.-w. generator. She is oil-powered throughout. Her advent on the coast has caused immense enthusiasm, especially among oil producers and shipping companies and it can well be said that the "Siam's" entry into port is nothing less than epochal, ushering in as it does, a new era, the era of oil, which only needs the completion of the Panama Canal to enter into its fullest prosperity.

PERFORATORS

Mojave Desert Oil Prospects are adversely reported on by R. W. Pack of the U. S. G. S., whose inspection of several of the wells and the district caused him to take the Adverse View. Better conserve it for a Naval Petroleum Reserve—What? A la Elk Hills?—It will be recalled that several very prominent petroleum geologists couldn't "see" Lost Hills at all as an oil district, until Martin and Dudley had brought in the field.

Restored to the American Citizen!

More than 1,678,000 acres of "withdrawn" lands in the Western States were restored to entry and about 50,000 acres were withdrawn during December, according to a statement given out by Secretary of Interior Lane. These lands will doubtless be opened to settlement and entry under the "Enlarged Homestead Act," which generously permits the American citizen to settle on the Government's valueless lands, after it is certain they are valueless.

Oklahoma Gas Lines Common Carriers or Purchasers

The district court at Oklahoma City affirmed the constitutionality of the bill making all gas lines in the State common carriers or common purchasers. The case will be appealed.

General Petroleum is finally financed and another great American asset has passed from American control to English. The new owners have not yet, however, got control of the Union Oil Company. Here's hoping it stays American.

Question of the Validity of President Taft's First Withdrawal, that of September 27, 1909, has finally reached the Supreme Court for decision. The contentions of both Government and operators who gained control of the properties, are so well known that it is time wasted to discuss them. The last Court of Appeal will decide—and will hear all the arguments first.

The Application for Industrial Purports of California Fuel Oil

By R. F. CHEVALIER

Early settlers of California used as fuel for domestic purposes the crude oil found in seepages in the southern part of the state. Drilling for oil for commercial purposes started about 1865 and in 1875 we have recorded a production of 3,000 barrels. In 1892 the Los Angeles field was discovered. The formation of the field was such that drilling was comparatively easy. Consequently many wells were brought in, resulting in an overproduction. In 1896 the price of oil dropped from \$1.50 to 15c to 30c a barrel. At this period on account of its cheapness the industries in southern California adopted oil for fuel. In 1898 owing to the decrease in production of the Los Angeles fields and the universal use of oil as fuel in this section, the demand was greater than the production and the price rose to in the neighborhood of a dollar a barrel. So satisfactory had oil proven as a fuel that those using it were loath to return to coal. Men interested in the oil industry were spurred on to further prospecting, resulting in the development of the Fullerton, Coalinga, Kern River, McKittrick and Sunset fields. An over production occurred and in 1902 oil was again at 15c and 20c a barrel. It was then that oil was substituted for coal in some of the industrial plants along the Pacific Coast states.

Its first use as fuel in the industrial field was for the generation of steam. Gradually it came into use as a fuel for other purposes and today it is used universally in almost every manufacturing plant where fuel is required.

United States Geological Survey figures show that in 1912 the total production was 86,000,000 barrels, 57,000,000 barrels, or about two-thirds of this production being used as fuel. This fuel is supplied to the trade principally by the Standard, Union and Associated Oil Companies and General Petroleum Company.

The Standard, after topping or removing the lighter oils from the crude, market the residuum for fuel; the Associated and Union Oil Companies dealing almost entirely in the crude oil as it comes from the wells. A topped oil makes an ideal fuel, the process of topping removes practically all of the water, rendering a product nearly uniform in gravity and in heat value. Furthermore this process decreased the percentage of Hydrogen, consequently increasing that of carbon. In the process of combustion, hydrogen turns into water, and although there are by far more heat units in a pound of hydrogen than in a corresponding weight of carbon, the latent heat lost in the escaping gases through the medium of steam formed in the combustion of hydrogen, lowers the amount of available heat. Hence an oil low in hydrogen contents and high in carbon will give better results in efficiency.

In the pursuit of his work, the writer has had occasion to make many boiler tests, using as fuel both topped and crude oil. In all tests, ideal conditions conducive to minimize all losses of heat in the furnace and boiler were secured and invariably the highest efficiencies were obtained when using a topped oil or one low in gravity and high in carbon content.

Another argument in favor of a topped or low gravity oil is in the present day method of purchase. Oil is invariably sold in bulk—a 42-gallon barrel being the standard. No definite relation between gravity and heat value exists owing to the other elements besides hydrogen and carbon in the oil. As a rule though, the lighter oils contain more heat units to the pound. Oils of the same gravity vary considerably in heat value. A study of the table of Physical Properties of Fuel Oils will enable the reader to draw his own conclusions as to the relative merits of the various oils used for fuel.

While on this topic, the reader may be interested in the results of an analysis made by the writer on a sample of crude oil.

The object of the analysis was to determine what per-

centage of gasoline, distillate and kerosene the crude would yield, and the quality of fuel oil the residuum would make. Although a laboratory process, the same results should be obtained commercially in the refinery with the probable exception that the gravity of the residuum would be still further reduced by the removal of some lubricating stock.

The oil in question was Coalinga crude having the following physical properties:

Gravity at 60 deg. F.; Specific .8914; Beaume 27.17 deg.

Flash point 65 deg. F. Fire point 80 deg. F.

The oil was processed with the following results:

Gasoline .....	.63.	Deg. Be.	8.00 per cent
Engine Distillate .....	.52.	Deg. Be.	4.55 per cent
Kerosene .....	.43.2	Deg. Be.	68.70 per cent
Fuel Oil (residuum) .....	.19.4	Deg. Be.	68.70 per cent
Losses in Treatment			4.50 per cent

An analysis of the residuum or fuel oil gave the following results:

Gravity at 60 deg. F.;—Specific .937; Beaume 19.4 deg.

Flash point 265 deg. F.

The heat value of a pound of moisture-free oil was 19,220 B. t. u. A barrel of this fuel would contain 6,304,160 B. t. u.

This makes a very good grade of fuel. The heat units in a pound and in a barrel comparing with the best of fuel oils.

Apparently the burning of oil is a simple matter, but to obtain the most efficient results requires the application of scientific principles coupled with practical knowledge.

As with any new science in the early stages, the method of burning was crude indeed. Burners were improvised from pipe and pipe fitting and introduced through the fire doors regardless of furnace design.

This resulted in damaged boiler plates and tubes. Operating engineers all over the country where oil was used, commenced to work on the design of an oil burner, with the result of flooding the patent office with applications for patents, each individual claiming great advantages over the other.

After the certainty of supply of crude oil was assured the Babcox & Wilcox Company, sent their testing engineer, Mr. F. H. Peabody of New York, to the Coast to carry on an investigation as to the relative merits of the various types of burners and furnaces. Mr. Peabody carried on a series of extensive tests for a considerable period. During which time he developed a furnace which bears his name, and is today used in connection with the B. & W. boilers.

The results of these tests and subsequent investigations along these lines by other engineers in recent years bear out the fact that as far as burners using steam as a means of atomization is concerned the difference in the various types is of no consequence, that of prime importance for efficiency and capacity is the design of furnace, draft passages and draft regulation.

(“Physical Properties” table top of page 12)

WANTED—Position with some oil or pipe line company, by a first-class mechanic, with technical and practical experience. Well acquainted with steam and other machinery. Good at repair or construction work, or handling men. Will consider any position where intelligence, integrity and efficiency are required. Address F. W. B., this office.

PHYSICAL PROPERTIES OF FUEL OIL—TABLE NO. 1

KIND	Gravity at 60 Deg. F. Specific—Beaume	Flash Point Deg. F.	Per Cent Water Con. (By Distill.)	British Thermal Units Per Lb. Per Barrel
Bakersfield Crude .....	.9689	14.5	Over 200	9.6 17,858 6,054,397
Bakersfield Crude .....	.9687	14.56	Over 200	4.5 17,849 6,051,864
Treated Oil .....	.9642	15.2	290	0.2 19,040 6,426,000
Mix. Coalinga and Bakersfield Crude ..	.9635	15.31	228	0.3 18,725 6,314,075
Treated Oil .....	.963	15.37	258	0.3 18,699 6,301,731
Treated Oil .....	.9623	15.49	275	0.1 18,782 6,325,777
Treated Oil .....	.9594	16.2		1.5 18,100 6,077,980
.....	.951	17.2	220	1.7 18,213 6,061,452
Coalinga Crude .....	.949	17.5	185	1.2 18,990 6,304,680
Crude Oil .....	.9485	17.6	155	3.5 18,553 6,159,596
Crude Oil .....	.9394	19.03	90	7.4 18,412 6,053,681
Crude Oil .....	.9192	22.3	78	7.0 18,923 6,083,933

(Determination Made by the Writer)

(This article will be continued in our next issue)

Company and Field Reports

The Union Tool Company is to increase its capital stock immediately to \$2,500,000, more than double the present, in order to provide sufficient capital to begin immediately the manufacture of Diesel type engines. Andrew Weir and Tilden Smith, who financed General Petroleum, carried on the negotiations which have resulted so satisfactorily. Much more complete information will be published as soon as we can get it directly from the Union Tool Company; our news thus far is from a press dispatch and a Los Angeles correspondent.

Producers Transportation Company has held its annual meeting, electing L. P. St. Clair, president, W. F. Stewart and Stanley W. Morsehead as vice-presidents, Giles Kellogg as secretary and treasurer. An assistant secretary and assistant treasurer were also chosen.

Fullerton Oil Company paid a \$120,000 dividend in January, 5 per cent regular quarterly disbursement and 15 per cent additional.

The Agency's December Returns to members were at the rate of 36 1-2 cents per barrel. Instead of the New Year "starting right" with a raise to Agency companies, it was the Standard that gave the raise—5 cents additional on all oil from 14 degrees to 20 degrees, or 40 cents; and 5 cents additional on all Whittier—Fullerton grades, where prices now range from 60 cents for 18 gravity to 85 cents for 28 gravity and lighter.

Combined Oil Co., held its annual shareholders' meeting on January 20th, in the Phelan Building, this city. It was determined that 2,125,307 shares were outstanding. Of this, 1,415,362 shares was represented by proxy in the name of President Dean, and 138,956 shares was personally represented. Two-thirds of the capital stock being represented, business proceeded. As complete an annual report as has in all probability, ever been presented, was given the shareholders by W. H. Dean, who was re-elected president, along with the old board of directors. The minutes of the meeting have been published, together with full data on the com-

pany's oil sales and financial condition and sent to the shareholders. Great praise is certainly due the present management for the efficient and economical manner in which they have done their duty to the shareholders.

Live Wires

The property of the Mays Consolidated Oil Company reported sold so many times, is now reported sold again, this time to Louis Titus, attorney, of this city, for a price in excess of a million dollars. The property lies in sections 28 and 30, Midway field "gusher district", embracing approximately 500 acres.

General Petroleum has now made payment on its Union option of \$800,000, so that \$200,000 remains to be paid yet to hold the option to Jan. 1, 1915.

Union Oil Company's well "Stearns No. 53," located in Brea Canyon, half a mile east of the famous Birch flowing well, has come in with a daily flow of 3,100 barrels of 28 degree gravity oil. The well, which is an old one deepened as an experiment, ran into a body of sand fully 450 feet thick, and was finished at 3910 feet depth. The well is a literal bonanza strike for the Union.

The Union Iron Works has been given a contract by the Standard Oil Company for an exact duplicate of the newly built tank steamer "Richmond", a photo of which was shown in our last issue.

Bureau of Mines has issue Technical Paper 54, "Errors in Gas Analysis due to assuming that the molecular volumes of all gases are alike." Paper is by Burrell and Siebert, of the Bureau.

To Our Kindly Readers

We beg to thank you one and all for your continuation as subscribers, especially the many who have renewed this past month. While we presume you would not take the Derrick if you did not find in its pages the information you wish, nevertheless the kindly letters received from so many of the subscribers at this time of the year call for our acknowledgment in return. The Derrick appreciates and returns your sentiment.

Interesting Developments of Recent Date

Standard Oil of California has at length received the permission of its Imperial Majesty, the State Railroad Commission, to sell its own shareholders at par some 45,000 unissued shares of its present capital stock. Their Exerutiating Mightinesses reserved, however, the right to pass on any future possible transactions involving any such moral turpitude as permitting shareholders to participate in the earnings of their own money, by allowing them to purchase more stock at par when market is around \$300, if the money to be derived from said sale to shareholders might possibly be used in extending marketing facilities of the pipe line variety, which extension would come under their jurisdiction through the Common Carrier law. What the Commission's cutting down of the Midway Gas Company's rates, and other rates coming under its jurisdiction, so that the margin of profit is narrowed to a very marked degree, it appears likely that California oil men will not rush madly into any campaign to "declare the Oil Industry a public utility."—such as desired by a contemporary oil publication. Rather will they try to unite to defeat such action. It would be tantamount to cutting off their own noses.

Will Fix Oil Prices

The Oklahoma Corporation Commission has announced that it will fix both the wholesale and retail prices of refined oils in that state. It may be possible, if this fixed plan works well in the matter of coal oil, that the commission may extend the same action to other lines. The prices at which coal oil shall be sold to the retailer and by the retailer to the consumer will be fixed by the commission. Price cutting in oil has grown to an alarming extent in Oklahoma, and this is expected to entirely end the practice. This will be a test of the power of the state to do what the government says is illegal; to-wit: maintain a fixed resale price.

Coal Tar Production In the United States is on the increase. Coal gas manufacturing companies to the number of 428, reported coal tar sales in 1912. Sales during 1912 aggregated 134,796,438 gallons, valued at \$3,802,047, an increase of 33 per cent in quantity and 50 per cent in value over 1908. Imports of coal tar derivatives into the United States annually exceed \$10,000,000, suggesting a business opportunity.

Seaboard Oil & Transit Company elected a new president at its recently held annual meeting, C. L. Flaek; W. Perry was chosen vice-president and C. A. Goodrich continues to act as secretary though not actually holding that position by election. W. H. Hart, F. W. Brenneman and A. F. Clark complete the directorate. Two items leaking out are to the effect that the Seaboard has made a contract to sell 100,000 barrels to Standard Oil, which would mean \$40,000 gross returns at present price; and that another contract has been entered into for the drilling of three new wells on the Gate City property, which appears to be the Seaboard's one dependable property. The Derrick mention-

ed in a recent report that the Gate City came very near to controlling the Seaboard; the Gate City is controlled by Mr. Flaek, Seaboard's new president.

Santa Maria Concentrates

The St. Helen Petroleum Co.'s well is down about 3800 feet having landed the 8 inch casing in an asphaltum bed.

The Rice Ranch Oil Co. is again drilling their test well on the Bradley Canyon lease. The well is about 1700 feet deep.

The Shaw Ranch Co., subsidiary of S. M. Oilfields, Ltd., is down about 1000 feet with their well, using a 16-inch rotary. The well is located about four miles north of Los Alamos on the old Shaw ranch. Associated Pipe Line Co. has removed the old pipe line between Cariaga and the Aleatraz refinery. Palmer Union is now producing about 40,000 barrels per month.

Union Oil is now compressing about 29,000,000 feet of gas daily, and when its new compressor is completed on the Newlove lease, will treat 33,000,00 feet daily, deriving therefrom an estimated 7000 gallons of gasoline per day.

Mexico

Pearson Interests In Mexico, began the construction of a \$3,000,000 refinery near Tampico during the year closed. Transportation facilities for exporting its products were augmented. In a great development campaign, 100 American drillers and field workers, many from California and all the best procurable, were employed by the Mexican Eagle Co., Lord Cawdray's corporation. The 1913 earnings are stated to have been very large.

Standard Oil Interests were active in the Tampico district, commencing a refinery and building storage tanks and pipe lines.

The Texas Company, of which J. S. Cullinan is president, exported a great quantity of oil and increased its pipe line system and storage, and prepared to build a refinery.

Waters-Pierce Interests increased facilities and activities during the year. A Waters-Pierce subsidiary, Mexican Fuel Co., got a big gusher in Topila field.

The Mexican Oil Co. brought in an enormous gusher at the latter end of the year, the well flowing, according to report, not less than 50,000 barrels daily.

Spellacy Mexican Co.'s Topila Petroleum Co., and Mexican Premier Oil Co. Concerning these the Derrick has written but has learned nothing thus far. It is thought that the Topila Petroleum Co. is in pretty good shape. Whether the Mexican Premier well has been completed we have yet to learn.

UNITED STATES GEOLOGICAL SURVEY'S PRELIMINARY REPORT ON OPERATIONS IN 1913

Petroleum Again Breaks Record—United States Output Over 240 Million Barrels

The remarkably great output of petroleum during each year of this century was more than maintained in 1913. The amount produced in the past twelve months exceeded 240,000,000 barrels, or about 32,000,000 metric tons, according to estimates of David T. Day, of the United States Geological Survey. The production in 1912, which made the record up to that time, was 222,113,218 barrels. The rate of increase in 1913 was greater at the end of the year than at the beginning. California increased at least 10,000,000 barrels over 1912, almost reaching 100,000,000 barrels. The consumption in California almost equaled the production, and the addition to stocks was very slight. Oklahoma also showed a significant increase, with about 6 per cent addition to the stocks. Texas and Louisiana likewise increased their product. The output of the Gulf field declined, but this was more than offset by the increases in northern Louisiana and Texas. Wyoming showed a significant increase from the Salt Creek field. Other States generally showed a decline, which was greatest in Illinois.

The following is an estimate of the production in 1913, compared with the statistics for 1912:

Petroleum Production in 1913 (estimated) and 1912, in Barrels

STATE	1913	1912
California	98,000,000	86,450,767
Oklahoma	62,500,000	51,427,071
Illinois	22,000,000	28,601,308
Texas	14,000,000	11,735,057
Louisiana	12,000,000	9,263,439
West Virginia	11,000,000	12,128,962
Ohio	8,000,000	8,969,007
Pennsylvania	7,000,000	7,837,948
Wyoming	3,000,000	1,572,306
Kansas	2,000,000	1,592,796
Indiana	900,000	970,009
New York	800,000	874,128
Kentucky	500,000	484,368
Colorado	200,000	206,052
Other States	100,000	.....
TOTAL	242,000,000	222,113,218

APPALACHIAN REGION

In New York and Pennsylvania great efforts were made to increase production by new drilling and more especially by cleaning out old wells. No great success was obtained, and the usual decline resulted. A deep test boring at Derrick City, near Bradford, Pa., was carried to 5,673 feet with hope of finding oil in the Medina sands. This boring is being continued.

In West Virginia no new pools comparable with the Blue Creek discovery of the previous year were opened. The drilling in Roane, Ritchie, and many other counties was successful enough to check the expected decline due to the decreased yield of Blue Creek.

The possibilities of finding oil in Western Kentucky aroused general interest.

Eastern Ohio was actively drilled with fair results, and in the Ohio River region an interesting innovation in handling old wells gave promise of very beneficial conservation of old oil fields in the future. Compressed air was forced into nearly exhausted oil-bearing sands through a well situated centrally in a group of old wells and the increase in yield was marked.

LIMESTONE FIELDS

The decline in the Lima (Ohio and Indiana) field was no greater than usual; in fact, the new development in Sullivan County, Ind., added an encouraging new supply.

Illinois continued the marked decline of 1912. Wildeatting gave unsatisfactory results.

MID-CONTINENT FIELD

The entire Mid-Continent region showed an increase, with a record total output. In Kansas prospecting returned to many localities which had been temporarily abandoned when the Glenn pool attracted all available capital to Oklahoma. During last year the high prices asked for favorable locations in Oklahoma reacted in favor of Kansas. The phenomenal bonuses obtained in auctioning leases on Osage Indian lands showed the high value of Oklahoma lands. The oil also increased in price to \$1.03 a barrel and would have gone higher but for the excessive production, which put oil into storage and created uncertainty as to future prices. Besides satisfactory development of the new Cushing and Cleveland pools, interesting prospects for new pools have been found at Newkirk, Wann, and Hieldton.

LARGE WELLS IN LOUISIANA

As usual, many large wells, difficult of control, were obtained in the Caddo region, Louisiana, including Mooringsport, and fires were disastrous. The product was irregular but showed an increase. In the Gulf region the product declined.

Through the efforts of the Louisiana Conservation Commission, the United States Bureau of Mines, and the oil operators the gas well near Oil City, which had run wild since the opening of the Caddo region, was closed.

INCREASE IN TEXAS

The Electra and other fields in northern Texas continued to increase, and the decline in the Gulf region was slight. Much wildeatting was in progress at many points over the State. Chief interest centered in a new development at Moran, in Shackelford County.

INCREASE IN WYOMING

Production increased in the Salt Creek field of Wyoming, and the erection of additional refineries was commenced. An important suit was begun by the Federal Government to recover oil lands entered upon since the first withdrawal order of former President Taft.

INCREASE IN CALIFORNIA

At the close of 1912 consumption in California had so nearly balanced the productive rate as to encourage the producers and at least to defeat concerted effort toward restriction of drilling. Many of the wells of 1913 were gushers of the phenomenal type and aided greatly in increasing the supply. The efforts to increase consumption succeeded fairly well, so that except during the month of greatest production, September, when about 9,000,000 barrels were produced, the consumption almost kept pace with the output and the amount sent to storage was less than a million barrels.

The Fullerton field continued to yield large gushers with sufficient frequency to justify the attempts to reach the unusually great depth of the oil sands.

Farther north the "west side" fields of Kern County continued as strong factors in the increasing output of the State, and the Buena Vista Hills, Elk Hills, and other new districts gained in interest. Even the comparatively old Kern River field near Bakersfield sustained interest by wildeatting to the northwest, where the Standard Oil Company's well went into oil and aroused geologic and financial speculation over a large area. The product of the district declined.

Coalinga's year had many eventful features, including extensions of territory to the east and the discovery of additional deep sands yielding oils containing paraffin. The value of the field was indicated by the sale of the California Oil Fields, Ltd., to the Shell Trading & Transportation Company, an ally of the Royal Dutch Syndicate, late in the year.

The Santa Maria field benefitted by increased technologic development by which the oils were topped and dehydrated with markedly greater efficiency. These developments included the successful introduction of the Cottrell electric dehydration process. The adoption of the Trumble and Dyer topping and dehydrating processes and the great advance in methods for obtaining gasoline from natural gas were among the striking achievements of the year, but while less spectacular, the economies effected by many minor improvements in the great refineries at

Point Richmond, Oleum and El Segundo contributed perhaps equally to the general problem of efficient refining.

In transportation the new pipe line of the General Petroleum Company over Tehachapi Pass effected cheaper transportation to the south, and the natural gas line to Los Angeles was equally advantageous. Meanwhile several new tank oil carriers and oil-burning steamships were added to the Pacific Coast trade and aided in increasing consumption.

FUEL FOR THE NAVY

On account of the increased cost of fuel oil for battle-ships and the fact that foreign corporations are rapidly purchasing reserves of oil in the United States, the Secretary of the Navy has recommended to Congress the policy of producing crude oil from the naval reserves and obtaining fuel oil from it.

There has been unusual progress in many parts of the country during the year in petroleum refining, especially in the dehydration of heavy crude oils, in obtaining gasoline from natural gas and synthetically from heavy oils, and in obtaining many special products from crude oils.

Doheny Interests In Mexico, the Mexican Petroleum, Huasteca Petroleum and Petroleum Transport Co., delivered more than thirteen million barrels of oil to purchasers in 1913. E. L. Doheny is reported to have estimated the gross earnings on the business as \$8,000,000, and the net as \$5,000,000. The companies expanded their facilities greatly, one of the extensions being the ordering of construction of a refinery at Tampico, the first unit of which will cost \$300,000. The Mexican Petroleum Co.'s new 1200-barrel well at Chijol, 30 miles from Tampico, attracted much interest in the Ebano field.

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Standard Oil Company

(California)

Oil Production in Foreign Countries

The feature of chief interest in connection with the foreign petroleum industry in 1913 was the active prospecting for new oil deposits. This prospecting extended to very remote regions including South Africa, southern Chili, Patagonia, many islands in the Pacific Ocean, China, Japan and the East Indies.

The prospecting of most interest to the United States was that in the West Indies, Central America, and South America, on account of the approaching completion of the Panama Canal. In Venezuela American capitalists were actively prospecting in many regions, chiefly along the northern border. More than 20 field parties were engaged in exploration with a view to the selection of the most promising oil fields that might be developed, working under a provisional concession from the Venezuelan Government. These capitalists and others were also actively and successfully developing oil concessions on the adjacent island of Trinidad.

In Colombia, English, American and Canadian oil interests were concerned with concessions for the development of large areas where, though no large oil wells have been developed, the seepages of oil and asphalt are so significant as to lead to the hope of a large addition to the supply of fuel oil. The Cawdray interests withdrew from Colombia in the latter part of the year.

There was delay in developing the oil fields of Argentina, owing, apparently, to the desire of the Government to retain oil as a national monopoly.

In Chile a governmental commission examined the oil and gas indications in the Magellan region and made a favorable report.

In Ecuador the Cowdray and other interests carried on a vigorous campaign for the acquirement and development of areas showing oil indications in the interior, as well as in the region of the old wells near the coast.

Interest was shown in the possibility of finding oil in Panama, Costa Rica, Nicaragua, and Honduras, but so recently that there has not yet been time for a significant result.

In the islands of the West Indies prospecting for petroleum was active in Haiti, where a small well was drilled near Azua. In Cuba drilling for oil was resumed near Havana, Cardenas, and Motembo. Explorations for oil were also active in Barbados.

In Mexico development work was remarkably active considering the unsettled condition of the country. It resulted in the development of several large wells in the neighborhood of the great gusher at Potrero del Llano. Another large gusher was obtained at Los Naranjos, on the shore of Tamiahua Lagoon, which indicated a considerable addition to the total oil supply. The importance of these additions can not well be overestimated, for in spite of the universal judgment that the Mexican fields are potentially very great the fact remains that so far Mexico has been practically limited to two or three at best, large wells and not a very large number of smaller wells of most uncertain character. Of the large wells the American (Doheny) interests owned two and the English (Pearson) one. Even with the phenomenal energy of the exploration work it was questionable whether new wells would be found promptly enough, under the peculiar Mexican conditions, to maintain present shipments, let alone supply a combined fleet of about 40 large tank steamers. The supply is now ample. As an evidence of the peculiar character of petroleum commerce, it is probable that with this additional supply the price per barrel will increase, because the greater confidence in the supply will stimulate the adoption of Mexican oil for refining and for fuel.

The 8-inch pipe line of the Mexican Eagle Oil Company (Pearson interests) was completed from Potrero del Llano to Tampico. The refinery of this company between La Barra and Tampico, north of Panuco River, is nearing completion. Among many other interesting developments in Mexico was the continued interest in the Topila oil field, near Tampico, where, in spite of many wells going to salt water, the unusually large gushers occasionally obtained have stimulated continual drilling operations.

A feature of importance for the United States was the development of a large fleet of tank steamers for coast-wise and trans-Atlantic trade. Imports of Mexican oil were extended to several refining centers of the United States.

The general interest in the development of new oil fields which characterized the year 1913 extended to Alberta and Saskatchewan, in Canada. Although explorations in

Saskatchewan gave either natural gas or else entirely negative results, a well 27 miles southwest of Calgary, in Alberta, struck oil of very light gravity, causing much excitement, and a large territory in that region was taken up by the prospectors for oil, probably much more than will be drilled within the next year. This oil excitement extended to the region north of Edmonton, in Alberta, where on Athabaska river and its tributaries, large bodies of so-called "tar sands" have been known for many years. These "tar sands" are in places 60 feet thick where exposed on the river banks and have been traced for considerable distances from the river. Seepages of oil are reported for as much as 400 miles to the north, and many thousands of acres of land have lately been taken up from the Canadian Government for oil development at some time in the future.

Work has continued in the developing of the natural gas, petroleum, and oil-bearing shales of New Brunswick.

In Russia the production of oil declined significantly in the larger fields, but meanwhile the Ural-Caspian field was actively exploited. This field is reached by steamers to the north shore of the Caspian Sea. There are no wharf facilities yet, landing being made in small boats through the shoal water. About 30 miles from the shore large oil wells have already been obtained, and pipe lines are being laid to the shore where barges can be loaded and towed up the Volga River without the reloading necessary for shipments from Baku. Exploration in the Ural-Caspian field north of the present oil wells has been extended over many miles and has shown that the area while very spotted, gives promise of further development. Exploration in this field is impracticable in winter but in summer can be prosecuted with success in spite of the great lack of water, the available supply of which is derived principally from snow scraped up in winter and conserved in pits. The inhabitants of the region are wandering tribes living in tents. They are peaceful and disposed to aid in the exploration.

In Galicia deep boring is tending to check the decline in the oil supply and the exploitation has been actively carried forward in all regions where indications have been noted in the past. It is probable that the Government of Hungary will develop the gas wells in the region of Kis-arnas.

In Roumania oil production continued active in spite of the very severe fire in the Moreni field. The chief contribution to the industry by the Government was the development of a pipeline system from the producing fields to Constanza, on the Black Sea.

In Japan production was greatly helped by the introduction of the rotary system of drilling.

California Crude is the cheapest in the country at the present time.

Mineral Waste is said by the Bureau of Mines to reach a million dollars daily, the Bureau claiming that the most urgent need for investigation and reform is in connection with the unnecessary waste of oil and natural gas that still prevails in many parts of the country. Bureau wants more money to do the investigating and reforming with.

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THE STOCK MARKET

Following are the completest quotations obtainable on all stocks listed on the San Francisco and Los Angeles exchanges:

San Francisco Quotations

Company	BID	ASKED
Alma		\$ 1 00
Associated Oil Stock	42 50	43 75
Caribou	1 15	1 25
Claremont	21	
Coalinga Central	20	
Coalinga Mohawk	70	
Creseceus		15
Home		15
Illinois Crude	04	05
Maricopa National		15
Maricopa 36		25
Monte Cristo	80	
Pacific Crude Oil	20	27
Pacific States Petroleum		15
Palmer Union	03	04
Paraffine	15	
Peerless	2 80	3 50
Premier		22
Pyramid		04
Record	2 00	2 50
Shawmut		50
Sovereign	08	
S. W. & B.	13	15
Sterling	1 30	1 50
Sunset Monarch		1 00
Turner	2 30	
Union Oil	60	
W. K. Oil	40	
Storage Certificates	31	

Los Angeles Quotations

Company	BID	ASKED
Amalgamated Oil	\$ 84 00	\$ 85 00
Associated Oil	42 37½	
Brookshire Oil		35
Calif. Midway Oil Co.	03¾	05½
Central		75
Columbia	65	80
Continental Oil	05	15
Enos Oil Co.	2 50	
Euclid Oil Co.		10
Fullerton Oil Co.		4 50
Globe	02	04
Jade Oil Co.	04	07
Maricopa Northern	10½	11½
Maricopa Queen Oil Co.		25
Mascot Oil Co.	50	1 00
Mexican Pet. (pfd.)	79 00	80 00
Mexican Pet. (com.)	68 00	71 00
Midway Northern	20	23
National Pacific Oil Co.	04¼	04½
New Penn. Pet. Co.	17	
Olinda Land Co. (Oil)	30	33½
Rice Ranch Oil Co.	1 05	1 10
Trader's Oil Co.	11 00	25 00
Union	62 00	64 00
Union Provident Co.	70 00	72 00
United Petroleum	65 00	
United Oil Co.	19	21

West Coast Oil (pfd.)	89 00	99 00
Western Union	86 00	
White Star Oil Co.	12½	15½

In Venezuela, the Shell-Royal Dutch interests, Standard Oil interests and the Barber Asphalt Paving Co., with a number of smaller independent companies are reported to have done an immense amount of field work, a large part of it being attended with very considerable success.

Refining California Oil.

(Continued from Page 9)

GASOLINE

The crude gasoline is pumped to the gasoline still. This is usually a cylindrical still provided with a perforated steam coil. The coil is usually placed a few inches from the bottom of the still. The still is built similar to other stills and connected by the vapor line with a condenser. No fire is used under the still. The heat required for evaporation is introduced through the steam. The distillation is carried on until the distillate has reached the average gravity of the gasoline desired. No acid treatment is given the gasoline, which, by this process, is not always water white and free from color. The product as manufactured, seems to meet all the commercial requirements. A fractional distillation of the gasoline sold on the market today shows many interesting facts. The gravity of the commercial gasoline ranges from 62 to 55 degrees B. The boiling points in some samples are very high as well as very low, showing a mixture of engine distillate and gasoline made from natural gas. Other samples show a mixture of ordinary gasoline and engine distillate.

Large quantities of gasoline are made from oil tops. Many of the heavy crude oils carry a small per cent. of light gravity oil, which is removed from the crude oil in a continuous still. The light distillate removed from the heavy crude oil is called "tops". These tops are usually about 50 degrees B. There are several plants making gasoline from natural gas. This gasoline is usually mixed with engine distillate and sold as ordinary gasoline.

(To Be Concluded)

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Vol 6

San Francisco, Cal., February, 1914

(Issued March 10.)

No. 7

Extension of Kern River Field

It is believed that the operations of the Standard Oil Company on the Kern River "front" have settled once and for all the question as to the source of supply of the Kern River "pool." The operations which the Standard has been conducting the past year and a half resulted in the proving of a very large commercial oil bearing district directly adjoining the "old field," as it will probably be called from now on, the new field beginning one township west of the Peerless and Monte Cristo properties. The "lay of the land" is northwest and southeast and the extension of the field is almost, if not fully, six miles. The oil is low gravity, of the same general character as the Kern River "old field" production.

The value of the extension can scarcely be over-estimated, in view of the growing demand for oil. It enriches the Standard by millions of dollars, and in proving that Company's acreage, proves that of a large territory owned by others, and made correspondingly valuable. The Standard owns the following sections in the new district: Sections 5, 9, 15, 21, 27, 35 and part of 34, all in 28-27. The portion of 34 not owned by the Standard is Monte Cristo's property. The new district, of course, is not bounded by section lines, and an immense amount of territory is proven up by the Standard's operations, so that the holders of this land have been made rich while the Standard put up the money.

The history of operations in the newly proven territory is very interesting. Among the first to operate there was Captain John Barneson, who started a well along in 1910 on section 35, 28-27, putting it down to 1600 feet. Here water and other troubles brought drilling to a stop, and after a short time Captain Barneson disposed of his acreage to the Standard, which Company then started a hole alongside of the abandoned well. At 1800-1900 feet they got oil, a well estimated at 200 to 300 barrels per day. The hole was lost, however, as new holes not infrequently are, where the territory is just being tried out and anything in the way of trouble may happen. It will be recalled that in the early history of the Midway the disheartening water troubles discouraged many operators and almost condemned some of the best territory there, until the for-

mation was understood. For this reason the Standard has proceeded cautiously in drilling the new territory. The Company has two wells drilling on 35, 28-27, to reach the sand struck in the abandoned well, and on section 21 and 27 test wells are drilling, while on sections 15 and 5 commercial oil has already been obtained. Oil is thus proven to underlie three sections—5, 15, and 35, 28-27, the well on section 5 being farthest removed from the old field's "boundary," which is five miles southeast in a straight line.

The Standard is said to have purchased a large tract of land on which operations are now under way and which lie within the reasonably proven area, for \$17 an acre, the transaction taking place before the field had been proven and after the Company's geologist, Dr. Starke, had made a report on it advising purchase. At the present time there is a great deal of interest in the new district and a number of sales are reported to have been made within the past several weeks, but not at \$17 an acre by a large margin. The Standard of California has always been willing to try out a new district, and in the main has had great success, although the Company has also known the disappointment of dry holes in 3000 to 4000 foot territory.

The extension of the Kern River field is of tremendous geological importance. Vast deposits may exist that will feed the district where drilling is profitable for a half century to come. Had the Kern River field been merely a pool, as was at first believed, it would surely by now have been pretty well drained, but as there is no break in the formation it appears reasonably certain that the newly proven area is the deposit from which the field has drawn its great supply.

Water Conditions in the Midway-Sunset District have just been studied by the State Mining Bureau's representative, R. P. McLaughlin, who will report his findings in the near future. Mr. McLaughlin tells us that there is practically no difference in the conditions prevailing in the fields he has thus far visited, the Coalinga and Midway-Sunset fields, as far as water infiltration is concerned. He expresses his belief that practically no field will differ materially in this one respect—that water is the most common and greatest menace the operators have to fight; to which every operator will undoubtedly agree.

Associated Oil Company's Huge Steel Oil Carrier Takes to Water

On February 11th, at exactly fifteen minutes after noon, more than six thousand people beheld one of the most notable and successful launchings ever occurring on San Francisco Bay. It was a brilliant occasion and a brilliant assemblage was on hand to see the largest tank ship yet constructed under the folds of the American flag, slip down the ways and out of her cradle at the Union Iron Works, in to the waters of the Bay. A cheer, prolonged, deafening, tremendous, rent the air as the "Buck," freed of the last restraining wire, started down the ways. The Union Iron Works band, consisting of employees, was playing its utmost, but what with the screaming of the witnesses, and the blowing of hundreds of whistles of craft of all sizes, it was literally drowned out.

To Miss Nina A. Heilbron, niece of Frank H. Buck, who is vice-president of the Associated, was given the honor of christening the great ship named after her uncle. Our photograph of the christening shows what happened to be the bottle of California champagne when it struck the prow of the pride of the Associated Oil Company's marine department. The inset photograph shows the happy expressions worn by Mr. and Mrs. Buck and Miss Heilbron.

And now for a little description of the new steamer. She is 426 feet, 9 inches long, 55 feet, 4 inches wide and 31 feet, 8 inches in molded depth. She is built on the Isherwood, or longitudinal system of framing and is divided into 16 tanks, the total capacity of which is

67,000 barrels of oil. The Buck's displacement is 14,000 tons and her contract price is just beyond three-quarters of a million dollars—\$760,000.

Unusual speed was made in the Buck's construction, her first keel plate having been laid only five months and five days previous to the launching on the 11th of February. Everything connected with her building was so well and thoroughly done that the day previous to the launching, the Union Oil Company entered into a contract with the Union Iron Works to have them build an exact duplicate of the "Buck," the specifications throughout being the same.

With the Standard Oil Company's sister ship to the "Richmond" contracted for with the Union Iron Works and the Associated and Union Oil Companies' two vessels, the Union Iron Works is again a busy industrial plant. It is a matter of unalloyed satisfaction to all true Californians to have this great shipbuilding firm furnishing California ships for California companies, thus permitting of the employment of American skilled labor. That this is appreciated is shown by the fact that the workers themselves organized a band to play when the "Buck" was launched. There is a great future here for ship-building; no place in the world is more favorably situated; there is no better harbor, nor anywhere, as ideal working conditions as here. And it must be acknowledged that the Union Iron Works, which has turned out battleships, cruisers and great units of the merchant marine, is eminently fitted to be foremost in the building of ships to carry the American flag around the globe.

Standard Oil's Annual Statement

Standard Oil of California's 1913 Earnings, as shown in the annual statement, published in the February "Standard Oil Bulletin", were immense, the net total being \$19,386,140.46. Dividends paid during the year amounted to \$4,493,399.40, and the balance, \$14,892,741.06, was carried to surplus. The increase of the net profits over 1912 was \$12,279,984.29. In his statement to the shareholders, President Scofield says:

"Without going into unnecessary detail, would state to the stockholders that of the net earnings for the year, \$10,911,481.13 has resulted from the profits derived in the ordinary course of the Company's business (this amounts to around 24 per cent on issued capital stock.—Ed.), and \$8,474,659.33 from the increase in values of the Company's producing properties, which are based upon the regulations of the United States Government in fixing their status for our returns to the United States Internal Revenue Department for the payment of excise taxes." The report continues that the daily output of the Company's wells increased from 10,864 barrels in 1912 to 26,575 barrels in 1913, and that at the end of 1913 the output was 39,572 barrels, where it is being maintained. Total assets of the Company as of December 31, 1913, are shown as \$87,-

970,754.29. Company has 24,310,310 barrels of oil in storage the last day of 1913. Capacity of three refineries was greatly increased, the Richmond plant now being capable of handling 65,000 barrels of oil per day, the El Segundo plant 20,000 barrels daily and the Bakersfield plant 10,000 barrels daily, a total capacity of 95,000 barrels daily. The "El Segundo" and "Richmond" were added to the Company's fleet of oil carriers, which now numbers 27 ships in service and a 65,000-barrel carrier, the "J. A. Moffett" under construction. All the new plant construction in 1913 is running to full capacity and further extensions are required to care for the growing business.

Estimates for new construction entail an approximate expenditure of \$5,000,000, "covering a new tank steamer to duplicate the "Richmond," 3,500,000 steel tankage for additional storage, increased capacity for refineries and pipe lines, and for additional marketing stations on the Pacific Coast." The report said that 7 1-2 per cent per annum was charged off to profit and loss in figuring depreciation of all physical plants, before the determination of "net profits." The Company's tank fleet today has a total net cargo capacity of 435,650 barrels of oil and its plant investment alone is over \$50,000,000. It is by all odds one of the most progressive, best equipped, and best handled oil companies in the world, in every branch of the business.

Launching of Great Tanker 'Frank H. Buck' From Her Cradle at the Union Iron Works, San Francisco, California

*The top Photo Shows the "Buck" an
Hour before the Launching*



This photo taken by C. V. Estey of the S. F. "Bulletin." Cut by courtesy Associated Oil Co.

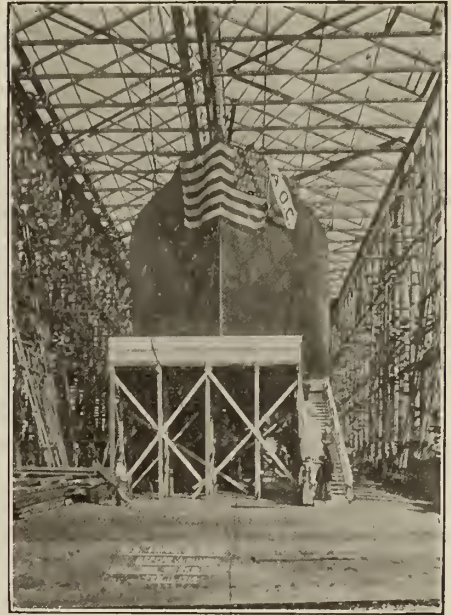


Photo by courtesy Union Iron Works Co.

Christening Scene

Miss Nina Heilbron, Frank H. Buck's Niece, breaking the Champagne Bottle on the bow of the "F. H. Buck" as she starts down the ways. Insert: Mr. and Mrs. Frank H. Buck and Miss Heilbron.

Sliding Into the Waters of the Bay, "Old Glory" Flying Fore and Aft.



Photo by courtesy Union Iron Works Co.

California Derrick

The Oil Authority of the Pacific Coast

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

"Public Policy" Versus Law

Is "public policy" to decide the validity of former President Taft's withdrawal order of September 27, 1909, or is the law as it was at that time to be the basis on which the judgment of the Supreme Court shall be founded? That is the burning question of the hour for a great many companies and individuals, as well as for the Government itself. If Public Policy decides, the oil operators on the disputed lands will lose; there is a question, on the other hand, whether they will not lose anyway, but the case in Wyoming, in which the Midwest Oil Company was sued exactly as California defendant oil companies are now being sued, was such a pronounced victory for the Midwest, that the chances appear very much in favor of the defendants here. The use for which the Government seeks possession of the properties cannot possibly enter into the law of the matter; it is an extra-legal, Public Policy matter, dragged in by the Government to show, possibly, that the laws **should have** permitted the President to make the first withdrawal. If the President himself was not absolutely certain of his power, which many attorneys claim to be shown by his message to Congress urging the validation of his act, and if the Federal Court of Wyoming could not see that the President was within his authority, how can it be expected that the Supreme Court will uphold the Government's case?

* * * *

The "Production Standing" of the various fields for the year 1913 is of considerable interest, showing the growth of production in the southern fields to have been very pronounced. Midway-Sunset, of course, was the heaviest producing district, shipping more than 39,000,000 barrels, 40.5 per cent of the total State output. Next came Coalinga with over 18,600,000 barrels, followed by the Whittier-Fullerton district with 10,640,000 odd barrels of oil; a phenomenal showing, made possible by the bringing in of a number of very large

flowing wells producing from deep sands, a large part of them being more than 3000 feet in depth.

Reliable old Kern followed the Whittier-Fullerton with very close to 10,000,000 barrels and without doubt would have led the latter district had there been anywhere near a steady market for all its production. It is history now that for several months a good many producers were shut down in Kern and the West Side fields during the distressful days, because there was no market whatever for their heavy product. Forty cents—paid today for the same oil—with a rumored forty-five per barrel, shows how times have brightened. Following Kern, as producer, came Santa Maria, making more than 5,816,000 barrels, (this exceeding McKittrick's output by some 85,000 barrels, including Lompoc's output with Santa Maria's.) The Lost Hills-Belridge district combined, made 4,040,000 odd barrels, all high gravity oil, most of it going to the Standard for refining. These valuable fields have been developed in the last four years and have added an immense acreage to the total area of California known oil districts. The Los Angeles-Salt Lake fields, together made a little over 2,915,000 barrels, while the Ventura County and Newhall districts produced together 1,022,000 odd barrels. Summerland made 62,000 barrels, while Watsonville's output was but 27,000 barrels. All these figures are as close to accurate as is likely to be ascertained and so have a definite value to all producers or would-be producers of California oil, while in the case of the Santa Maria field, for instance, the output and standing will be very interesting in view of the increasing marine consumption and the opening of the Panama Canal, which makes its oil available to and probably in closest touch with the new market.

* * * *

Edmund Burke, in his supplemental brief filed in the United States Supreme Court, declares oil has been regarded as petroleum "since the days of Pliny, in the first century." He did not state, however, that California oil has always been referred to as having an "asphalt base." Asphalt is surely not vegetable and is defined by Webster as a "mineral pitch". If California oil has an "asphalt base" and asphalt is a "mineral pitch", who will be so bold as to declare California oil the descendant of an ignoble vegetable? Pursuing Mr. Oil's ancestry in the other direction, is he not a legitimate descendant of a mineral? Verily; and, like father, like son; ergo, California oil is mineral.

* * * *

This is the Secret of Success

Oh Business Houses, large and small,
If you desire to gain your ends,
The very quickest way of all
Is to enlarge your sphere of friends!
Hark not unto the ancient rule
That taught 'twas waste to advertise;
Be not the "penny-wise, pound fool!"
Get wise! Get wise! Get wise! Get wise!

THIS is the Secret of Success:
THIS is the Music of the Spheres!
The way to get new business
Is through the EYES as well as ears!
The road to Everlasting Fame
And a bank roll reaching to the skies
Is letting people know your name
And what you DO—So, A-D-V-E-R-T-I-S-E!

Diesel Engine Construction on San Francisco Bay

The Remarkably Successful "Dow-Willans" Diesel Engine Operating the Dow Plant in Alameda

(By CHARLES CARROLL WRIGHT)

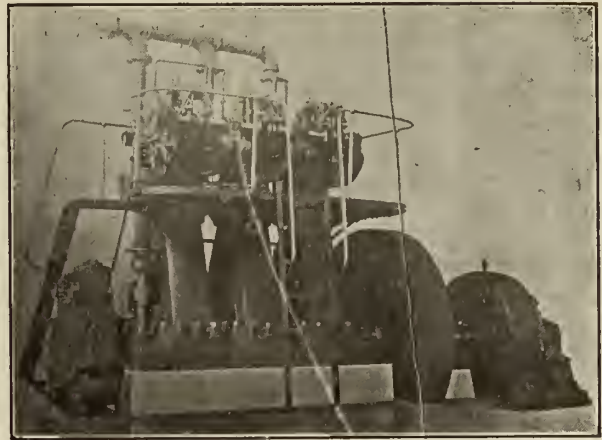
The recent visit here of the "Siam," on its "round the world" cruise, commanded the attention of all manner of engineers, of oil producers, fuel consumers and power men, and of the general public. Owing to the publicity given the Siam's arrival, she was simply overrun with visitors, and there were undoubtedly a great many people with no small percentage of engineers among them, who were disappointed in their attempt to see and to obtain an idea of the working of her machinery. The wonderful Diesel engine is still a mystery to many, unquestioned though its existence and its operation may be.

It was indeed a remarkable, in fact an epochal event, when the "Siam" entered our port after its long cruise without a single flaw chargeable to her machinery, but what appears a no less epochal event occurred long before the Siam's arrival here, although it was little known. This refers to the manufacture of the first Diesel-type engine on the Pacific Coast at the "Dow Pump and Diesel Engine Company" works in Alameda, where a 150-horsepower Dow-Willans Diesel engine was constructed last year, was set up in the Dow power building and has furnished all the power for their works since September 20, 1913. A photograph of the first Diesel constructed on this coast is herewith presented, and a plain non-technical description may be of no little interest.

The engine is an unqualified success. In operation it is practically noiseless. The engine, which has three cylinders, is not large, being very compact. Including a 100 k. w. Crocker-Wheeler generator to which it is direct-connected, the whole space occupied by the new Dow Diesel is about 21x10 feet. Only one attendant is required. He watches the engines; that is his "work." There is no boiler to worry about, consequently no firing, thus minimizing shut-downs to attend to repair work, as very little repair work is necessary.

No preparation is necessary for starting this engine. When work ends Saturday, operating costs end with it; the engine is stopped with the men, and starts one minute before they resume on the following Monday. The actual starting of the engines requires only 17 seconds.

The tops of the cylinders are very heavy, for it is here that the greater pressure comes when combustion first takes place. As the oil fires it expands and this it is that forces down the pistons. It is very impressive to see this engine operating so noiselessly and without vibration, with no sign of fire or steam. Up in the corner, a little above the engine's top, is a small oil tank from which a rather diminutive oil feed tube drops to supply the source of power. "Star" fuel oil is used. The oil is injected into the cylinders at a pressure of from 600 to 900 pounds by the use of compressed air stored in two tanks close to the engine, from



which the pressure is obtained. In fact, the engine supplies everything for its own operation except the oil itself and water.

While "Star" fuel is being used at present, all kinds of oil has been used in the engine with good results, the different oils varying in gravity from 14 to 22 degrees and containing from 25 to 61 per cent asphaltum.

The pressure in the cylinder is constant at 485 pounds. The number of revolutions per minute is 250, or 15,000 per hour. This is what is known as a four-cycle engine, so that there are 7500 admissions of oil into each cylinder per hour. The amount of oil used per hour is .374 pounds per brake h. p. hour.

I have been informed that to install this Diesel the cost is considerably more than for an ordinary steam installation. The first cost unquestionably is higher; exactly how much higher I don't know, because I am not an engineer. But anyone can understand that what appears expensive to start with is often less expensive ere it reaches the scrap heap. About the best thermal efficiency that can be obtained with the ordinary steam plant of the same capacity as the engine now running the Dow works, is 14 1-2 per cent; while the efficiency of the Dow Diesel is 34 per cent. And think of the trouble running a steam plant, compared with the marvelous simplicity, freedom from trouble, and results with the Diesel.

Mr. R. Y. Hoover who furnished most of the facts and figures presented, was kind enough to show me how simple the engine is in construction and to explain its working in considerable detail. He introduced me to the engineer, Walter J. Rogers, a marine engineer for sixteen years. When I asked him how he liked his work he said he "never wanted to go back to steam;" and that "this engine is the most efficient and best engine I have ever run—never saw its equal for efficiency or anything else." This serves to show the attitude of the man who knows the engine best. It is an interesting side light on one phase of the Diesel-type engine.

The Dow Company are now constructing two engines of 200 h. p. each, each of four cylinders, for the National Ice & Cold Storage Company, which shows that the merits of the new Pacific Coast Diesel are by no means unappreciated.

REFINING CALIFORNIA PETROLEUM

(Continued from January Number)

Kerosene

The fraction from the crude oil distillation to be used for kerosene is re-distilled by using a low fire under the still with live steam in the still. The fraction of oil coming over between 48 degrees and 36 degrees B., is used for kerosene.

The kerosene is treated with 2 per cent of Sulphuric Acid 66 degrees B., and thoroughly agitated with air for two hours. The sludge and acid are allowed to settle and then drawn from the bottom of the agitator. After washing with water, the acid is neutralized with a solution of caustic soda. The sludge is drawn from the agitator after settling to the bottom. The oil is washed with water and the dry oil is placed in a clean still and distilled again with care to prevent cracking. The oil coming over between 48 and 38 degrees B., is used for kerosene. This kerosene is again treated with a 2 1-2 per cent fuming sulphuric acid, agitated, and thoroughly washed. The acid remaining in the oil is neutralized with a solution of caustic soda and the resulting sludge is drawn from the agitator. The treated kerosene is thoroughly washed with water. The kerosene is water white, has a good flash and is free from sulphur. The kerosene burns with a clean white flame, the wick of the lamp is not charred and the chimney is not smoked. The desired flash test is secured by careful distillation and the removal of oils lighter than 48 degrees B. The kerosene is steamed by some refiners after distillation to get the flash test required.

Lubricating Oils

Many of the California oils contain a wax resembling vaseline. The crude oils containing this wax cannot be used for the manufacture of red oil or gas engine cylinder oil. The distilled oils containing this wax have a very high cold test. On a cold day the lubricating oil stock will not flow from the tank. Many oil wells that produced oil free from the wax a few years ago are producing oil today full of the wax and this

oil can not be used for making high grade lubricating stock. Lubricating oil made from crude oil free from the wax has a cold test many degrees below zero.

Lubricating oil from California oil has a good flash test, with a very high viscosity and a low specific gravity.

The specific gravity of lubricating oil made from California oil will distinguish it from Paraffin base lubricating oils. The Gas Engine Cylinder oil manufactured from California asphalt oil has good lubricating properties and the oil does not produce carbon in the cylinder of the gas engine.

The carbon deposits from gas engine cylinder oil are produced by using lubricating oil containing fractions with too high a specific gravity. Experience has taught the refiner that an oil of about 21 or 22 degrees B., produces the best results for a gas engine cylinder oil. To produce a 21 degree B. oil, the cuts should be between 24 and 18 degrees B. If the lubricating oil contains cuts higher than 18 degrees B., the oil has a tendency to deposit carbon in the cylinders of gasoline engines. Some refiners make a heavier oil and compound it with a light paraffin lubricating oil. The lubricating oil stock before the acid treatment, should be placed in a clean still and steamed for many hours with live steam to give it a high flash and a sweet odor. The oil produced will test as follows:

Gravity, 21 degrees Beaume.
Viscosity, 98 degrees.
Flash, 378 degrees F.
Fire, 391 degrees F.
Cold test, below zero.

Red Engine Oil

Is made the same as the gas engine cylinder oil except the cut is made between 20 and 15 degrees B. This cut produces an oil that is about 18 degrees B., after it is acid treated. This oil tests as follows:

Gravity, 18 degrees Beaume.
Viscosity, 130 degrees
Flash, 401 degrees F.
Fire, 425 degrees F.
Cold test, below zero.

Treating Gas Engine Cylinder Oil and Red Engine Oil

After the oil stock has been prepared as outlined

THE GREATEST OIL REFINERY IN CALIFORNIA

Property
of the
STANDARD
OIL CO.
of California



By Prof. Laird J. Stabler, Professor of Chemistry, University of Southern California

above, it must have a thorough acid treatment. The distillates resulting from the asphalt base mineral oils are unfit for lubricating oils before the removal of all the asphalt and tarry material.

The oil stock to be treated for lubrication oil is pumped into a lead lined tank, containing a steam coil of lead, and the oil heated to about 80 degrees C. To 100 barrels of lubricating oil stock in the lead lined tank is added 100 gallons of 60 degrees B., sulphuric acid. After the addition of the acid the contents of the treating tank are agitated by air for a suitable length of time, generally two hours. The mixture of acid and oil thus produced is then allowed to stand until the asphaltum and similar or related substances which have been acted upon by the acid and rendered insoluble shall have settled to the bottom of the agitator. The sludge should be drawn from the bottom of the agitator as fast as it settles or it will become so thick that it will not flow through the opening in the bottom of the agitator. It may require several days for the removal of the sludge as it is desired that most of the insoluble matter and acid may have ample time to separate from the oil. It may be necessary to treat the oil with sulphuric acid several times before the asphaltum and tarry matter is entirely removed. In practice a second treatment of 100 gallons of sulphuric acid 66 degrees B., is added to the oil and the operation followed as outlined for the first treatment. In some cases a third treatment of 100 gallons of sulphuric acid, 66 degrees B., is given the oil and the procedure followed as described in the first treatment. After the oil has been treated with acid so as to produce the desired color the remaining acid is neutralized with lime, or ammonia or caustic soda, or soda ash. All of the chemicals named for neutralizing the acid are used by refiners. The writer prefers to use a saturated solution of sodium carbonate to neutralize the acid. The oil stock is treated with acid as described and the remaining acid in the oil is neutralized with a saturated solution of sodium carbonate. The oil and the solution of sodium carbonate are agitated with air. The saturated solution of sodium carbonate is added in excess. The excess can be determined by using a test solution of methyl-orange. The California oils produce heavy emulsions when treated with water and an alkali salt. The emulsions resulting in treating lubricating oils give the refiner all kinds of trouble. The oil will re-

main emulsified for weeks when placed in a bleacher in the sun. Many methods have been tried to destroy the emulsion. Some refiners filter through Fuller's earth; others filter through saw dust and salt. In some refineries the oil is heated in a jacketed kettle and hot dry air passed through the oil. The steam jacketed kettle with hot dry air has a tendency to darken the oil. The filtering processes are slow and expensive. The writer has invented a process that has been used successfully for several years in cleansing emulsions resulting in the treatment of heavy lubricating oils. The emulsion is destroyed without darkening the oil. The process consists in passing the emulsified lubricating oil over steam pipes in a closed tank connected with a vacuum pump. The process is made continuous. The oil is heated only a few minutes at a very low temperature. All of the water is removed from the emulsion and the oil left dry and bright. Lubricating oils of any gravity can be treated and the emulsion cleaned by this process.

The loss of oil in the acid treatment as outlined, is from 15 to 20 per cent. It takes about 100 lb. soda ash to neutralize the remaining acid in 100 barrels of treated oil stock.

It is not customary to compound the gas engine cylinder or the red engine oils. These oils are used as manufactured at the refinery. The demand for lubricating oils made from California crude oil is increasing rapidly. The gas engine cylinder oil has taken the place of the paraffin cylinder oil, because of the low cold test and the high viscosity.

Steam Cylinder Oil

The oil coming from the still between 20 deg., B., and 15 degrees B., is given several acid treatments as outlined for gas engine cylinder oil. The treated oil, after all the sludge is removed, is not neutralized with an alkali. The acid treated oil is put in a still and heated very slowly with a low fire under the still. A large amount of super-heated steam is passed through the oil in the still. The lighter oils and acid are removed. The steam prevents the oil in the still from cracking. The oil in the still is reduced about one half in volume. The reduced oil remaining in the still is sold as steam cylinder stock. The steam cylinder oil is high grade and is giving satisfaction.

(THE END)

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San Francisco
Bay

Interesting Developments of Recent Date

Extension of Market comes as a result of the order of the Canadian Government that the railroads crossing the timber belt of the Rockies must burn oil. The Grand Trunk is making the change as rapidly as possible. The Grand Trunk will use 2,000 barrels daily to begin with; later on, according to traffic requirements. Canadian Pacific already uses 5,000 barrels daily. The Canadian Northern, when it reaches the Coast, will increase the demand materially.

Imports of Mexican Oil into the Gulf States, during January, totalled 1,297,941 barrels; for February a large increase is expected.

The Midwest Oil Company and the Franco-Wyoming Petroleum Company, two pioneer and highly successful concerns operating very rich properties in the Wyoming fields, both possessed of operating refineries and storage and pipe line facilities, have combined their interests in a merger company capitalized at \$20,000,000. The new Company is called the "Midwest Refining Company." Twelve million dollars of the new stock was paid for the Midwest and six million dollars of the capital stock for the Franco Petroleum, leaving two millions capital stock in the treasury.

Standard Oil of Indiana has completed its \$1,000,000 refinery at Casper, Wyoming, and is running oil.

The United States Government is now considering the feasibility of constructing a pipe line from the Oklahoma oilfields to the Gulf coast, and a refinery at the coast, to provide suitable oil for the navy and for such other purposes as may be deemed fit.

American Gasoline Co., purveyors of "Shell" motor spirit to His Imperial Majesty, the California Autoist, has moved its headquarters from 1101 Kohl building to the Security building, 343 Sansome street. A change in the management has also occurred, Mr. F. P. S. Harris having been succeeded by Mr. Smith, an over-seas gentleman. The yellow wagons with a pictured seashell on the side are now a familiar sight all around the Bay. Very little news has come from the American Gasoline headquarters of late. It is presumed they are too busily engaged attending to business to give out much information.

Operators on "Withdrawn" Lands have been allowed by a court order of Judge Dooling, of the Federal Court, sitting in this city, to resume discontinued operations, and buyers are permitted to contract for the oil produced, the arrangement being that a Commissioner shall receive the money and deposit it at interest pending the decision of the Supreme Court as to the validity of the withdrawal order of Sept. 27, 1909. The company pays for the Commissioner. The case which brought about the arrangement was that in which application was made by the Midway Northern Oil Co., operating on section 32, 12-23, Sunset, to be permitted to continue operations inasmuch as it was suffering heavy loss lying idle. While permission to produce has been granted, no more wells may be drilled under the present arrangement; and a statement must be furnished monthly showing production, grade of oil, operating expense and selling price. The Commissioner will pay the bills and the profits above operation are to be placed in escrow until the suit is settled one way or the other. It is presumed all other companies in the same category may operate under similar arrangements.

Independent Oil Producers Agency Returns to its members for sales during January amounted to 37 cents per barrel, a raise of one-half cent over return for the past several months. It is anticipated that by June of this year the Agency will be netting its members 40 cents per barrel for their oil. The Agency sold between 16,000,000 and 17,000,000 barrels of oil in 1913, the net returns ranging from 34 to 36 1-2 cents per barrel.

Production, Consumption and Field Operations for January

(Standard Oil Figures)

The output of all the fields for January averaged 281,835 barrels daily, an increase of 11,482 barrels per day compared with December. The increase in the Midway-Sunset field amounted to 12,001 barrels per day. The situation as to shut-in production is practically unchanged.

Total stocks for January show an increase of 1,438,383 barrels over December, of which 940,846 barrels is due to the semi-annual adjustment of the various field and pipe line stocks.

Following is the regular statement showing all the details usually given:

FIELD	New Rigs	Drilling	Completed During Month	Abandoned During Month	Producing	Production Per Day
Kern River	2	5	..	..	1,400	20,015
McKittrick .....	..	1	..	..	267	10,875
Midway and Sunset	14	103	20	1	1,236	133,822
Lost Hills and Belridge	3	14	9	1	189	14,626
Coalinga .....	..	30	3	..	883	43,758
Lompoc and Santa Maria	2	8	..	..	223	13,140
Ventura County-Newhall .....	..	21	1	..	394	2,203
Los Angeles-Salt Lake	2	6	1	..	686	6,546
Whittier-Fullerton	4	72	3	1	510	36,505
Summerland .....	..	..	..	..	122	171
Watsonville .....	..	..	..	..	5	75
Salinas Valley .....	..	..	..	..	..	..
Total	27	260	37	3	5,915	281,835

Total crude oil stock, January 31, 1914, 49,308,560 bbls.

Total shipments from fields, Jan. 1914, 8,239,363 bbls.

Petroleum Exports From California During January, 1914

CRUDE

San Francisco .....	..
Southern California .....	..

ILLUMINATING

San Francisco	6,932,105	337,748
Southern California	1,900	316

LUBRICATING and PARAFFIN

San Francisco	108,080	18,692
Southern California	446	154

NAPHTHAS, GASOLINE, ETC.

San Francisco	602,768	57,622
Southern California	270	61

RESIDUUM, GAS OIL and FUEL OILS, ETC.

San Francisco	25,672,798	449,468
Southern California	47,309	1,416

Totals	33,365,676	865,477
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The Settling Tank

Midway Premier Oil Company, operating in the Midway, north of Taft, is averaging 18,000 barrels of oil monthly, and during the past period of "hard times" has drilled in a number of very good producers. The oil is 23 gravity and sells to the Standard at fifty cents per barrel. The property is in excellent condition, the Company has no debts and is now on a dividend paying basis. It is doubtful, however, if dividends will be paid in the very near future, as the Company is conservatively managed, and further investment will probably be deemed advisable before beginning regular disbursements. This is evidenced by the fact that A. J. Snyder, President of the Company, has just purchased for it one tract of 80 acres in the new Kern River "front" field, and another, same district, of 320 acres, which, by the way, would indicate what conservative operators think of the new district. There will be a shareholders' meeting in March, when the condition of the company will be discussed by the management and shareholders, who will doubtless be very pleased with the manner their interests have been attended to.

Progress—Associated Oil used generally to be spoken of as "a good future investment." It was always a "future" investment until the change came about that placed Wm. Sproule in the presidency and F. B. Henderson as real manager. From that day Associated Oil has made progress in everything that goes to make up equipment in handling oil. The company's latest acquisition for handling oil is the new steamer Frank H. Buck. Long may she ride! At 3 per cent per year, Associated is paying more than 7 per cent on market price right now, and it is not at all unlikely that when the company has reached a stage of business perfection satisfactory to its officers, the amount may be doubled. But, stock valuation aside, it is certain that the Associated is being handled in a very business-like way.

National Bureau of Mines has issued for free distribution Technical Paper 66, by J. M. Pollard, formerly superintendent of the Honolulu Consolidated Oil Company, and J. M. Heggem, the title of the paper being "Mudladen Fluid Applied to Well Drilling." The possibility of using crude oil as a reducing agent in the smelting of ores, along with other studies, has been investigated by the Bureau, and a report made of the results. The Bulletin announcing this does not state when the report will be available.

Would you believe it? The Secretary of the Navy has had the Elk Hills and Buena Vista Hills investigated as a "source of reserve oil supply for the navy." The idea of such a thing after the government geologist has fixed the "recoverable" oil in Elk Hills at 150,000,000 barrels! That Secretary must be from Missouri, eh?

Ralph Arnold and V. R. Garfias have issued an exhaustive book on the "Geology and Technology of the California Oil Fields," probably the completest operators guide ever published.

Leasing Bill Hearing in Washington

The House Public Lands Committee will give a hearing on the pending oil lands leasing bill on March 25th, and the Congressmen desire as large a number of Californians to attend as possible. Col. Tim Spellacy, who is known to be very close in touch with Secretary of the Interior Franklin K. Lane, has been in Washington for some time past in the interests of the bill.

Dividends for January, paid by California Oil Companies, totalled \$521,898.

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California Concentrates

Union Oil's "Stearns No. 53," their Brea Canyon bonanza, is holding up strong, making around 3000 barrels daily, of 24 gravity oil. The well is 3900 feet deep.

Obispo Oil Co.'s gusher in the Maricopa field, is reported to be still making 7500 barrels daily.

Calokla Oil's No. 1, section 19, 3-9, Coyote Hills, which came in a flowing well at 3100 feet, is holding up well. Initial output was variously reported at from 500 to 1500 barrels per day. Gravity 22.5 deg. Beaume. Output now about 500 barrels.

Mascot Oil Co. is again reported as likely to be sold "to a foreign syndicate." No details.

The "**Good Roads Oil Co.**" of Bakersfield has been incorporated by Messrs. Barlow and Hill, Bakersfield, of oil map fame, and Chas. Dickenson, of Maricopa.

Rancho La Brea Oil Co. is drilling two wells in Salt Lake field.

The **Union Oil Co.** has recently brought in two big producers on the Graham and Loftus lease in La Habra Valley. Both wells are reported as making over 500 barrels daily.

Calumet Oil's well, Ventura County, is said to be making 300 barrels daily, "steady as the clock."

Montebello Oil Co., Fillmore, Ventura County, enjoyed a prosperous 1913, producing 405,366 barrels of oil and selling all thereof to Standard Oil at \$1.10 per barrel. Total net profits after an enormous depreciation allowance, were \$380,458, while dividends in the sum of \$60,000 were disbursed. One per cent monthly is paid. Company assets total \$1,531,414.15. The Company has recently installed a big compressor which will add gasoline manufacture to the profit-making features.

Trader's Oil Co. on February 9th, levied an assessment of \$3 per share on the capital stock, payable on March 19th or before, delinquent April 16.

California Midway Oil Co. has levied its fifth assessment of 5 cents per share, payable March 27, delinquent April 23.

Amalgamated's Regular Monthly Dividend of \$1.25 per share is payable March 24th, books closing the 19th.

West Coast pays \$1.50 per share March 16th.

Hale-McLeod Oil Co., Midway district, has just brought in a new producer, reported as "pretty fair."

Combined Oil Company is now in very good circumstances, making 15,000 barrels per month from its six wells, all of which are on the pump, operated by motors. The company is getting ready to put down three more wells to bring up its production as prices raise, so that toward the latter part of the present year they will be paying dividends. This Company has been honestly and efficiently managed, so that today, with their property in excellent shape, they have very few debts, none of which they cannot pay off from production while drilling new wells. The Company has two new draining tanks, two new heating tanks and a shipping tank, and are really on the high road to prosperity. The shareholders deserve congratulation on the intelligence displayed in the selection of their management.

Mysterious Sale in Lost Hills

The advent of several mysterious strangers in the Lost Hills field caused a rumor to spread that an English syndicate was about to buy a tract adjoining the properties of the Standard Oil and General Petroleum Companies, at a price said to be \$450,000. No reliable details are available.

The Product of Experience

Do you believe that years of experience in studying the lubricating requirements of all types of machinery has qualified us to determine the oil most suitable for automobile lubrication? Do you believe that years of experience in the manufacture of hundreds of high grade lubricating oils has made us competent to produce such an oil? Then we say to you unqualifiedly that

ZEROLENE

THE STANDARD OIL FOR MOTOR CARS

is the best automobile oil we can make. Experts on lubrication, we recommend it as an efficient oil for your car.

2,500,000 gallons sold last year—1,000,000 more than in 1912. Doesn't this prove our claim? Doesn't this prove that Zerolene must be an efficient oil? Ask our nearest agency regarding bulk delivery.

Standard Oil Company
(California)

Not Mentioned in Mr. Brown's Article

The Secretary of the New Pennsylvania Petroleum Company, which operates in the Santa Maria field, has written us that a number of Santa Maria operators were surprised to see no mention in Mr. Frank L. Brown's article on the Santa Maria field, published in the January Number, of the third oil sand recently developed in the "main Santa Maria field." Secretary Scott said that from this newly developed supply source a very high grade of oil is being secured, and that the producers drilled into it are very prolific. Naturally, says Mr. Scott, the property values have been increased very materially, and the life of the field will be greatly prolonged by the discovery. Also, that the output of the Santa Maria district is on the increase, which, he observes, will be of interest to possible investors. Mr. Brown notified us to begin with that to mention everything he knew about the field would fill a book, and as his time was limited he would write us the best article he could for our January number, and that we could supplement this in later editions. As the editor expects to go down to Santa Maria in the near future, it is possible he may get facts not mentioned by Mr. Brown for those readers who would like fuller

information on the development of this district. In spite of the omission of the facts mentioned, Mr. Brown's article was by all odds the best exposition of the Santa Maria fields' development opportunities that we have yet seen published.

Dutch-Shell's Phenomenal Mexican Gusher

The La Corona Petroleum Company's well No. 5, located in the Panuco field, is one of the largest yet obtained in any Mexican field. The La Corona Petroleum Company is a Dutch-Shell subsidiary. The well came in January with a flow estimated at 25,000 to 30,000 barrels per day, and has been doing just under 40,000 barrels every day since, so that a tremendous amount of oil is now above ground in sumps, it being estimated that at least 20 acres of sumps are filled with the product, in addition to steel storage. The well was permitted to run "wild" for a short time into a 55,000-barrel tank and was gauged, the flow showing it to be capable of making 180,000 barrels in 24 hours if allowed to continue for that length of time. It would appear that this is the world's greatest oil well. Panuco oil is bringing the same as our low gravity product—40 cents. The "great pay" was run into at 1806 feet.

Pinal Dome Gasoline

Made at Santa Maria

Is the Best for Your Car

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IT IS MADE FROM THE PUREST AND SWEETEST OF CRUDE OIL

IT HAS THE HIGHEST GRAVITY (One to three degrees higher than the next best.)

IT EVAPORATES RAPIDLY AND CLEANLY, AND CARRIES NEITHER SEDIMENT NOR WATER

IT IS TWICE DISTILLED BY STEAM ONLY, AND WILL NOT CORRODE OR CARBON

IT IGNITES AT THE LOWEST TEMPERATURE AND WILL START IN COLD WEATHER WITHOUT PRIMING OR HEATING

IT IS THE BEST—TRY IT FOR YOURSELF.

THE STOCK MARKET

The market is livening up and already feels the raised prices paid for oil. Many companies names appear in the quotations which have been conspicuous by their absence for lo! these many months gone by. In short, exactly what was to be expected, is occurring, to-wit: The increased returns to operators for crude, and the general "easier" financial feeling, are causing the stock investing and speculating public to again interest themselves in oil companies. The following list shows that buyers are waking up to opportunity, although the offers suggest timorousness or else a desire to profit on some one else's necessities. Following is the list.

San Francisco Quotations

COMPANY	BID	ASKED
Amalgamated Oil	\$84 00	
Associated Oil Stock	42 00	
Brookshire	27	
Caribou	1 25	1 60
Claremont	20	25
Coalinga Central	20	
Coalinga Mohawk	80	
Crescens	01	06
Home	16	
Illinois Crude	04	
Maricopa National		15
Maricopa 36		25
Monte Cristo		1 00
Pacific Crude Oil	20	27
Pacific States Petroleum	05	
Paraffine	10	
Palmer Union	06	07
Premier	16	20
Pyramid	03	05
Record	2.50	
Republic	10	
S. F. & McKittrick	12 00	15 00
Sauer Dough	1 25	
Shadmut		50
Sovereign	08	
S. W. & B.	13	
Sterling	1 25	
Sunset Monarch		1 00
Turner	2 30	
Union	71 00	
United Oil	19	
Storage Certificates	31	

Los Angeles Quotations

The southern exchange is comparatively spirited, nearly all listed stocks being in evidence on the quotation sheet, as here shown:

COMPANY	BID	ASKED
Amalgamated Oil	\$84 50	\$86 00
Associated Oil	42 37½	42 75
Brookshire Oil		35
Calif. Midway Oil Co.	02	03
Caribou Oil Mining Co.	1 17½	1 22½
Central	40	
Columbia	70	80
Continental Oil	05	
Fullerton Oil	3 50	5 00
Globe	01½	03
Jade Oil Co.	04½	05½
Maricopa Northern	10¼	11
Maricopa Queen Oil Co.		18

Mascot Oil Co.	62½	69
Mexican Pet. Ltd. (pfd.)		90 00
Midway Northdn	19	23
National Pacific Oil Co.	03½	03¾
New Penn. Pet. Co.		25
Olinda Land Co. (Oil)	30	35
Palmer Oil Co.	06¼	
Rice Ranch Oil Co.		1 10
Trader's Oil Co.	18 00	20 00
Union	69 25	70 00
Union Provident Co.	73 00	80 00
United Petroleum	73 00	77 00
United Oil Co.	22	23½
West Coast Oil Pfd	99 50	100 50
Western Union	101 00	

Miscellaneous Notes

At least thirteen different kinds of Diesel engines will be shown at the Exposition here in 1915, as floor space has already been reserved by their manufacturers. The Exposition is building very rapidly.

The Union Pipe Line Company of Wellsville, New York, an affiliation of the Union Petroleum Company, of Philadelphia, paid a ten per cent dividend to its shareholders March 1st. Mr. A. C. Woodman, vice-president and treasurer of the Union Petroleum Company, was elected president of the Union Pipe Line Company. Both companies did an excellent business in 1913.

Trial of the Indicted Former Officials of the Seaboard Oil and Transit Company will be held in one of the departments of the Federal Court in Los Angeles sometime in May. A continuance was secured on the 18th of December, 1913, when the case was called. This is the final continuance, however, if what we learn here is correct. A prominent attorney here says that in his opinion the Government has been made a tool of by a coterie of Canadians, who wished to "get even" with Wm. Moore and could only "land" him by securing the indictment of the entire directorate of the Seaboard on the charge of misuse of the mails.

Southern Pacific's New Ferry "Alameda," Now Running Between San Francisco and Alameda Mole

On February 26th, the new ferry "Alameda" was placed in operation plying between San Francisco and the Alameda mole, which discharges the Alameda and central Oakland passenger traffic. The "Alameda" is the fastest, prettiest and by all odds most up-to-date ferry on the bay. All of her machinery is below deck and invisible. She is of steel construction throughout, commodious, light and airy. Her lower deck has a cement floor above the iron, an immense improvement, as it will allow of much more sanitary cleaning and does away with much wear and tear that wooden decks are subject to.

The engines do not occupy as much space as might be imagined, in spite of their being entirely below deck, as there is room for a grill and dining room fully twice as large as in the older ferries. There are two engines, operated independently of each other, the S. P. will have less dock repairing to do. Dock repairing has come high. The "Alameda" is a great satisfaction to Alameda commuters, who fully appreciate her. She burns OIL, of course.



California Fuel Oil and the Diesel Engine

By J. B. Howell, Engineer

The Diesel Engine is perhaps the most talked of prime-mover before the engineering world of today, and owing to the publicity given the Siam's arrival in this port, the Pacific Coast Engineers have been investigating the Diesel Engine for use in many power problems.

Unfortunately however, there has been much adverse criticism from prominent engineers in this Coast; criticism that is not in harmony with the facts, and is, therefore, unjust.

For instance, a few days ago a purchaser of Diesel Engines received a communication from a prominent mining engineer in this city, in which he stated that the Diesel engines have a pressure in the cylinders of 960 lbs., and could not drive alternating current generators in synchronism. These statements are of course absurd, and would only be those made by an agent, trying to sell a steam plant. The indicator card of a properly adjusted Diesel engine, will show a pressure of not more than 500 lbs.

It is not the intention of the writer to make this article descriptive of the Diesel Engine, but it is desired to place before the public the true status of the Diesel Engine, and its ability to burn California Crude Oil, for power production, either by operating alternating current generators in synchronism, by direct connecting to pumps, or line drive for machinery of any description

directly connected to a 250 volt D. C. Crocker-Wheeler Generator, and has been in operation for the past 7 months and has been using California Star Fuel Oil.

This oil is a product of the Standard Oil Company, and consists of ordinary fuel oil of approximately 15 degrees Beaume gravity, mixed with Stove Oil, the product of the distilleries, of about 31 degrees Beaume gravity; sufficient quantities of each are mixed to raise the gravity of the ordinary fuel oil to 24 degrees gravity. The chemical analysis of this oil is approximately as follows:

ANALYSIS OF "STAR" FUEL OIL

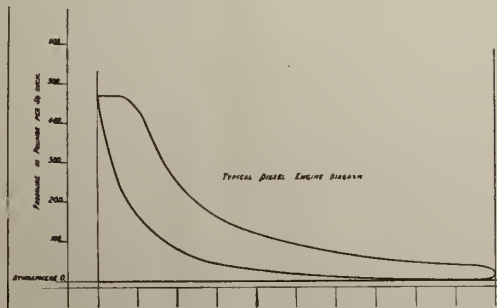
Gravity	24 Deg. Beaume
Specific Gravity .....	.91
Flash—Open Cup—not under	180 Deg. F.
Burn—Open cup—	235 Deg. F.
Flash—Closed Cup—not under	165 Deg. F.
Asphalt	25 per cent
Sulphur .....	.75 per cent.
B. T. U.'s per lb.	19,200
Lbs. per gal.	7.586
Lbs. per 42 gal. bbl.	318.212

It will be noted that this oil contains 25 per cent of asphaltum.

The question will immediately arise, "Why do Diesel Engines not use the ordinary fuel oil of 15 degrees Beaume?"

To answer this question it is necessary to consider the combustion of oil fuel under boilers; there are two systems to be dealt with, viz: steam and oil, and the direct pressure systems

With the direct pressure system it is very necessary to drain off the water and filter the oil before it passes to the burners, and if proper attention be given to this matter, no trouble will be given by the burners choking, or by defective combustion in the presence of water. The temperature at which the oil will give the most economical result depends upon its nature and gravity. An average mixture of fuel oil will require to be heated to about 160 degrees F. Taraken Crude to about 120 F., and some of the heavier European residue to as much as 240 degrees. All other things being considered the great advantages of temperature and pressure are the most important items in the efficient working of the direct pressure systems. In extremely cold



(Figure 1)

Is a typical card taken from the Dow-Willans Diesel Engine, which is operating the entire plant of the Dow Pump and Diesel Engine Works, at Alameda, California. This engine is of the vertical inverted 3 cylinder 4 cycle type, and develops 150 H. P. It is

climates, and with heavy oil, a little difficulty may arise, owing to the thickening of the fuel, interfering with the working of the pump. This is provided against by the addition of small heating coils in the tanks, so that when occasions arise a little steam may be passed through the coils.

It is readily seen that the burning of oil under the boilers depends upon the gravity and cleanliness of the oil, and when the gravity is approximately 17 degrees Beaume, it becomes necessary to heat the oil to reduce the viscosity, or it will be impossible to properly atomize it and burn it.

Crude petroleum of a low flash-point is chiefly used as fuel in steam raising in the oil fields, but the oil for commerce is usually required to be of high flash-point, and is a distillate of crude petroleum, in which the more volatile constituents have been removed by fractional distillation. The flash-point of the fuel oil in British Columbia, is 150 deg. F., and in the U. S., is 140 deg. F., and in Russia, Bulgaria and Germany it is 80 deg. C., or 176 deg. F.

For the use of such oils in steam production various systems have been from time to time patented, and with one of these it was found that one 1-lb. of Russia Ostatki (Petroleum Residuum), evaporated 14 1-2 lbs., of water, whereas, with the same boiler 1 lb. of coal evaporated 7 lbs., of water.

The use of coal for steam production is, however, a wasteful method as not more than 14.2 per cent of the energy of the fuel with the steam engine is obtained while as much as 37 per cent is obtained with the Diesel Engine.

The Diesel Engine will burn any fuel oil, which can be used underneath the boiler, and it will burn this oil at the economy above stated, providing as much attention will be given in heating the oil to reduce the viscosity, and to clean the oil, as will be given for using the oil underneath the boilers.

The main point to be considered is that burning oil in a Diesel Engine depends upon the proper velocity with which the oil enters the cylinder.

The fuel oil valve on a Diesel Engine opens approximately 5 deg. before the piston has reached the top center. It is operated by a cam which should be so designed that it will produce the maximum opening just as the piston has passed the top center, and if the hole in the flash-plate is of the proper size, the oil will be injected in the cylinder, with such velocity that it will produce progressive combustion; it is necessary to maintain the viscosity of the oil the same at all times, and this can only be obtained by preheating when a low grade fuel oil is used.

The only limitation to the Diesel Engine using fuel oil is the percentage of ash that the oil contains, and the sulphur content, which is not injurious when present in small quantities, but when mixed with water will form an acid which will attack the metals of the valves and cylinders.

When the Siam arrived in San Francisco, it was reported that considerable trouble was encountered in burning the California Fuel Oil, that had been delivered to this ship at San Pedro, Cal. A careful chemical analysis of the oil indicated that the asphaltum content was approximately 55 per cent, the gravity about 16 deg. Beaume but in other respects is conformed to the specifications for fuel oil, as regards sulphur content, water content, and foreign impurities. The Siam how-

ever was not provided with heating coils of any description, and the viscosity of this oil was so great that it was necessary to maintain a pressure of 85 atmospheres on the fuel pumps, in order to deliver fuel oil to the spray valves. This pressure of course became greater when starting the engine, as all pipes were much cooler than when the engines were running, and for this reason solely Star Fuel Oil was substituted and the Siam proceeded to Seattle, without any trouble whatever, and the fuel economy with this oil was much better than obtained with the Borneo Fuel Oil, that they had been using.

It must be remembered that the oil firms in the Eastern part of the United States are supplying a paraffin base oil which is of much higher gravity than the California Oil; and it was only 3 years ago when the United States Government started experimenting with California Oils in the Diesel Engines, of the 4 cylinder type, of the submarines of the F. class.

Numbers of samples of oils of various gravities were tested, and Star Fuel Oil was adopted as a satisfactory oil; a cheaper oil would have necessitated heating the oil in order to reduce the viscosity sufficiently to do away with excessive pressure on fuel pumps.

When Diesel Engines are installed in conjunction with steam plants, the same fuel oil that is used for the boilers may be taken directly from the heaters; but with the Diesel Engine as the only power producer, it is necessary to start the engine on light fuel oil, similar in characteristics to Star Oil, until the engine is sufficiently warmed up so that the exhaust gases may be utilized in heating the ordinary fuel oil, and then this oil may be used.

Few people realize that there are Diesel Engine plants in 26 States of the Union, and these plants aggregate over 90,000 H. P. Over thirty-eight per cent. have given repeat orders, and 15 per cent. third orders to increase the capacity of the plants. These engines are all of the European design and embody the patented principles of the late Dr. Rudolph Diesel. It must be remembered that the Diesel Engine has been in operation in Europe for the last fifteen years, and is as reliable as a steam plant, and more economical.

Semi-Diesel Engines are in use for small power production, and have been fairly successful, but have been unable to burn the same oil as the Diesel Engine, due to the fact that they are operated upon the hot bulb principle; they compress the air to only about 350 lbs., and depend upon the heat of combustion space at a red heat. The fuel oil is sprayed upon the incandescent part of the head or tube, and causes an increase in the pressure to approximately 450 lbs. From a scientific standpoint the following occurs: petroleum vapor is immediately formed which would require, theoretically 250 times its volume to produce combustion, and the result is that a deposit of soot forms, in the cylinder, which will in time tend to coke, and will eventually wear out the cylinder. Until recently it was due to this fact that part of the heads had to be maintained in an incandescent state.

All of the Diesel Engine plants are operated by ordinary steam mechanics, and especially in the United States, where the industry is practically new, the operating engineers have been taken chiefly from the steam plants, and have been put in charge of the new

plants. The consensus of opinion of managers and engineers of these plants in the United States is that they are as economical as the builders claim, as reliable as steam, and should be installed where the load factor is thirty per cent. or more.

It is obvious however, that when considering units above 3,000 K. W., the steam turbine will be highly economical and the initial cost may decide against the Diesel Engine, which would necessarily have to be in several units. A water rate of 12 lbs. per K. W. hr., is not uncommon in large turbine installations, and if the evaporative power of 1-lb. of oil is taken at 14 lbs., then the plant would be operating on less than 1 lbs of oil per K. W. hr. The Diesel Engine plant could produce this power for approximately .63 of a lb. of oil per K. W. hr.

The Dow-Williams Diesel Engine Co., have, in my opinion, selected the most up-to-date and modern designs for the Diesel Engine. The essential features which recommend this engine to engineers are the open crank-case, affording an opportunity of inspecting all of the working parts, so that the heating of bearings may be readily detected, forced feed lubrication throughout, and the Reavell 3 stage air compressor, which resembles the Brotherhood type of engine with the cylinders mounted radially on the crank. The engine is of the multiple cylinder type, which is especially adapted for the generation of alternating current. They not only guarantee their engines as regards fuel economy, but also guarantee that they will operate satisfactorily on California Crude Oil, which is free

from foreign impurities, does not contain more than one per cent. of sulphur, and is given the same treatment as the oil for the burners in a steam plant. They utilize as a heating agent, the exhaust gases from the engine.

When one realizes that Star Fuel Oil may be purchased at 71c. per bbl., f. o. b. carload lots, in Bakersfield, that it is always a standard product, and that its heat value is guaranteed; unless the ordinary fuel oil can be obtained at a much cheaper figure than the Star Fuel Oil, it will then be found that the excess amount of heat units contained in the Star Fuel Oil, will bring the fuel bill to approximately the same figure as when using the ordinary fuel oil.

If, however, the Diesel Engine is installed in conjunction with steam boilers which are operating on ordinary fuel oil, the use of Star Fuel Oil for the Diesel Engine would necessitate two tanks, and in this case the purchaser would use the ordinary fuel oil, by pre-heating with steam.

Numerous concerns in the United States have operated their plants successfully for the past five years, with Diesel Engines, and have had such remarkable success, that they are ordering additional units, whenever they increase their power.

Finally, every engineer who is confronted with power problems for industrial plants, electric lighting plants, heating plants, or in fact, any case where the load factor is at least thirty per cent., will only be taking a step backward, if he does not consider the Diesel Engine to take care of his needs.

The Settling Tank

University of California has several courses of benefit in preparing young men for the oil business, especially as regards the technical. The college of mining is giving a course of lectures on petroleum and the college of mechanics a course on gas engineering. A laboratory course for more advanced students deals with the chemical technology of petroleum, methods of refining and allied subjects.

Another Great American Oil Burning Battleship, the super dreadnaught Oklahoma, was successfully launched March 23d from the yard of the New York Shipbuilding Co., at Camden, N. J. The great battleship is 583 feet long, displacement 27,500 tons, and has as her principal weapons ten 14-inch guns capable of firing 1400-lb. shells. Her speed will be about 23 miles per hour, developed by engines of 24,800 indicated horsepower. The Oklahoma will burn oil, carried in her double bottom. She is by 500 tons the greatest American battleship.

Total Production of the Baku, Russia, oil district—notably the Balakhany-Sabundehn- Ramany and Bibi Eibat fields—**comprising only 2,498 acres**, since 1870, amounts to 1,382,200,000 barrels.

State Mining Bureau estimates the value of the total mineral output of California last year at \$100,000,000, an increase over 1912 of, roughly, \$8,500,000. The

Bureau estimates Oil's value at the well at \$46,000,000. Petroleum has increased since 1905 from \$9,007,820 to to the above figure for 1913. The Bureau estimates the natural gas value last year at \$1,250,000; the total for oil and gas thus reaching \$47,250,000; the gold output was \$20,000,000.

State Mining Bureau has issued its second report on water conditions in the oil fields, this dealing with the Midway-Sunset district conditions. The State's geologist found that the water was seriously menacing the production of quite a large area. He arrived at the conclusion that to efficiently develop a large oil field technical information is absolutely necessary; that the Midway-Sunset and Coalinga fields should each have a water commissioner in constant attendance; that "the technical information will probably be more generally accepted and used by operators if the man giving it out is a public official empowered to obtain logs or other data of all wells"; that legislation "is doubtless necessary, to prevent some operators from damaging neighboring property and to repair damaging wells owned by defunct or financially embarrassed concerns"; and that "power to order repairs or abandonment of wells should not be lodged in the hands of a single individual." It is possible that these conclusions may embody the administration's legislative program to regulate oil field conditions at the next meeting of the lawmakers.

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

Removal of the Derrick's Office

The management of the Derrick calls the attention of subscribers, advertisers and other friends to the removal of our office from 788 Mission Street, where the Derrick has been published these past three years, to the **Carmen-Johnson Building, 340 Sansome Street**. Our headquarters, temporarily, is room 228. Our mail, however, should be sent to P. O. Box 1295, Sta. K, as heretofore. Phone number, **Sutter 3342**.

* * * *

An Exceptionally Valuable Paper.

The Derrick wishes to call the attention of all its readers, especially of power users or possible power users, to the paper in this issue by Mr. J. B. Howell, dealing with the adaptability of California fuel oil as fuel for Diesel engines. The value of this article lies in the fact that it was written for the Derrick by a man who KNOWS. Mr. Howell was called in consultation by the owners of the "Siam" when she was in this port, which is one indication of the fact that he is a reliable Diesel engineer. We are especially anxious to have Mr. Howell's article reach those engineers who until the present time have been unconvinced of the Diesel's ability to run on California Crude, as it will be of interest to them, since only facts are given.

* * *

Acquisition of California Holdings by British

The statements of Sir Marcus Samuel, of the Shell-Royal Dutch Combine, that "the oil business is world-wide, and we are determined that the great distributing organization which we have created shall not be dependent upon any one field, or upon any one country, or upon any one government," seem to have made little impression in the United States. Yet the Shell interests, which are the Rothschilds' interests, have purchased very heavily in the United States, especially in Oklahoma and California. Outside of this country they

have immense holdings in Mexico, Russia, Borneo and Roumania. Some of the best petroleum lands in California are passing from American to English ownership at the present time. More and more are our California companies ceasing to be American.

Sir Winston Churchill, First Lord of the British Admiralty, said but a few days ago:

"The great exertion has been made. There is no difficulty in obtaining oil. Oil in quantities has been purchased, and large quantities will reach us during the period covered by the new estimates."

We doubt not California oil will in no small degree contribute to fueling the British navy, once the Canal is in operation. It doesn't take a tremendous amount of figuring to arrive at that conclusion. With the General Petroleum sold to the Wier Syndicate, and every evidence that Union Oil's control will pass to the same interests, and with the Union's control the marketing of the agency's production for six years to come, and with a possibility of the California Petroleum Corporation also going into the merger, yielding the product of the American Oilfields and American Petroleum Companies, an extraordinary percentage of our production passes from American to British control.

The Shell-Royal Dutch own the American Gasoline Company and the American Gasoline Company now owns the California Oilfields, Ltd., and other properties of unquestioned value.

The British are obtaining a very strong foothold in California.

Dr. David T. Day made an address in December, 1913, before the Franklin Institute of Pennsylvania, on "Petroleum And Its Derivatives," which we wish every reader of The Derrick might have the benefit of. The address was brief, and very simply worded—and the more valuable for that reason. We hope to give a thorough review of this address in the next issue.

* * * *

Ralph Arnold and V. R. Garfias' "Geology and Technology of the California Oilfields," a reprint of their address before the American Institute of Mining Engineers in New York, in February, is an excellent resume of existing oil conditions in California. The "paper" makes an 87-page booklet, with a map showing the location of the various oil fields, together with all the important pipe lines of the State, and fourteen photographs giving characteristic views of the development and geology of the various fields. The paper consists of a general statement, a good historical review of the California industry, brief history and present position of the larger oil companies, market conditions and price of oil, including Mr. Arnold's ideas of the present oil reserve and future price of oil, description of the transportation and storage facilities of the State, refineries, exports, etc. This is followed by a brief review of the geologic formations of the oil districts and the relations of geology to the oil deposits. Each district is then described in detail, the points given including its location, general geologic conditions, depth of wells, range in gravity of the oil, range in productivity of the wells, chemical analyses of the characteristic oils and the production of each individual field by years from its inception to date. The drilling methods in California are then briefly discussed, together with the average cost of wells. The bibliography of the principal government papers relating to the California oil fields is included, together with a table showing the yearly production of the various California fields from the time they were discovered to date, total value of the oil, and average price per barrel.

It will be seen that the paper is vastly more than a mere detailing of geology and technology; that it is, in fact, an up-to-date exposition of the California Oil Industry by two of the best informed and foremost of Californian petroleum engineers and geologists. Everybody in the Oil Business ought to read the chapters, "Present Position of the Larger Companies," "Market Conditions and Price of Oil," "Transportation," "Oil in Storage," "Storage Capacity." Especially does The Derrick recommend the reading of "Market Conditions and Price of Oil." It certainly is an able exposition of the conditions that have prevailed. "Oil Reserve and the Future Price of Oil" is also of great interest—very great interest. Some statements had evidently been prepared several months in advance of the delivery of the paper, as, for instance, the following: "At present the Standard Oil Co. produces little heavy oil and does not buy any under 18 deg. Baume." It is only to be expected that a careful resume would take time in preparation and by merely considering the paper as having been written in December last, the reader has a picture of conditions as they then were and still are with but few changes, and a most excellent forecast of future conditions.

The Derrick unhesitatingly pronounces this paper the finest exposition of California Oil conditions that has yet been written.

* * * *

Dreadful Toll of Coal Mines

In spite of all the work of the Bureau of Mines to improve conditions, and all the precautionary measures taken by the mine owners, there were 425 more deaths from mining accidents in 1913 than in 1912, an increase of 18 per cent, "with an increase of only about 8 per cent in coal production." It's a dreadful business that takes such a toll of human lives; but the economy of oil will doubtless cause the toll to drop as converts to its use increase, thus displacing coal.

* * * *

Mr. R. F. Chevalier's Article, "The Application for Industrial Purposes of California Fuel Oil," which was begun in the January number, will be continued in our next issue. Mr. Chevalier has been so busy that he could not finish his paper for this issue.

February Statistics

Production, Consumption and Field Operations for February

(Standard Oil Figures)

The big facts shown by the February figures are: Production slackened from 281,835 barrels per day in January to 280,561 barrels per day in February. Consumption, or shipments, eased off from 265,786 barrels daily in January to 263,109 barrels daily in February. Surplus increased 488,645 barrels, the storage now amounting to 49,797,205 barrels.

The number of new rigs increased by 5, but drilling wells dropped in number from 260 to 244—or 16 less. There was a drop in completions—1 less in February; and 4 holes were abandoned—1 more than the previous month. In spite of the 36 completions these figures show but 5,858 producers, while the January figures

showed 5,915. Adding the 36 completed in February to those already producing, makes a total of 5,951. Deducting abandoned wells, 4, makes 5,947. The inference is that 89 wells are either shut down or being cleaned out, or both. There must be close to 7,000 wells capable of producing, yet there are only 5,858 making oil—a difference of say 1,150 wells. This is a subject that would provide no little interest if it could be entered into in a thorough manner. It might develop a number of facts relative to operating costs and prices that would be of really great interest to not only operators, but consumers as well.

Following is the regular statement showing all the details usually given:

FIELD	New Rigs	Drilling	Completed During Month	Abandoned During Month	Producing	Production Per Day
Kern River	1	7	1	1	1,399	19,980
McKittrick	1	1	..	..	268	10,822
Midway and Sunset	10	89	22	1	1,242	132,598
Lost Hills and Belridge	7	15	6	1	194	14,312
Coalinga .....	..	26	..	..	846	44,480
Lompoc and Santa Maria	1	9	..	..	211	11,989
Ventura County-Newhall	1	20	1	..	385	2,129
Los Angeles-Salt Lake .....	..	5	1	1	680	7,366
Whittier-Fullerton	12	72	5	..	506	36,648
Summerland .....	..	..	..	..	122	161
Watsonville .....	..	..	..	..	5	75
Salinas Valley .....	..	..	..	..	..	..
Total	33	244	36	4	5,858	280,561

Total crude oil stock, Feb. 28, 1914, 49,797,205 bbls.
Total shipments from fields, Feb. 1914, 7,367,064 bbls.

Petroleum Exports from California During

February, 1914

Products	Gallons	Dollars
CRUDE		
San Francisco .....	..	..
Southern California .....	..	..
ILLUMINATING		
San Francisco	6,579,618	\$305,700
Southern California	1,340	251
LUBRICATING and PARAFFIN		
San Francisco	123,565	17,065
Southern California	302	165
NAPHTHAS, GASOLINE, ETC.		
San Francisco	132,719	23,326
Southern California	418	93
RESIDUUM, GAS OIL and FUEL OILS, ETC.		
San Francisco	19,843,977	335,537
Southern California	5,600,715	93,337
Totals	32,282,654	\$775,474

Note—Of the total shipments, San Francisco exported 26,679,879 gallons of all classes of oils and Southern California the balance, 5,602,775 gallons. The respective values totaled \$681,268 and \$93,846. As February was three days shorter than the preceding month there was a slight falling off in total shipments, amounting to 1,083,022 gallons and a loss in receipts of \$90,003. On a daily average both shipments and returns were greater in February.

ILLUSTRATED SECTION

THE SQUARE RIGGER "RADIANT," TYPE OF THE AMERICAN "MERCHANT MARINE" OF THE LAST CENTURY, ON A TRIP TO CHINA—CARRYING AMERICAN OIL PRODUCTS



Oil to Revive the Clipper Ship

While America's merchant marine has greatly increased with the growth of the Oil Industry, through the use of tank ships, there is now a good opportunity to revive the clipper sailing ship of the last century, as a result of the development of the Diesel engine. In fact, there has recently been launched at Bordeaux, France, a magnificent specimen of the genuine clipper ship, equipped with auxiliary Diesel engines capable of giving the vessel a speed of 10½ knots per hour. As it is estimated that **without the engines**, in a "whole-sail" breeze, "The France" can make 16 knots in an hour, exceptional speed is possible at a very low cost. If the French, who have no oil fields, and must purchase their oil from other countries and pay the freight charges, can operate the clipper-Diesel at a profit, which is unquestioned, what is to prevent Americans from doing the same thing? If ship builders and owners have not considered the matter, they may lose a great business opportunity. With the opening of the Canal, California oil is available to the markets of the world. A careful article in this issue of the Derrick is devoted to the use of California oil in Diesel engines, it should be worth while to ship builders.

Shell Royal Dutch May Buy This Refinery



The famous Oilport Refinery, built at a cost of \$1,500,000, has been reported sold many times. "Rumor" says the Dutch-Shell have decided upon its purchase.

Palmer Union Oil's Well No. 4, on Compressed Air, making 400 barrels per day. No. 5 is making 200 barrels. No. 11, 125 barrels. No. 3, 170 barrels daily—All on Air.

SUCCESS WITH COMPRESSED AIR





Rises From Its Ashes

Pacific States Refineries Company, which lost its plant by fire several months ago, has been making rapid strides in reconstruction. Stills and agitators are again in place, gasoline is being turned out steadily and in a few days the plant will be making lubricants again. Some of the fire scorched and badly battered tanks have been repaired in spite of their hopeless appearance and it is possible that nearly all of them can be used again after going to a tank doctor. The loss, however, was very heavy—unquestionably in excess of \$100,000, possibly \$150,000, with only a small insurance. But the “men behind” were not to be put out of business by fire and the rise of the plant from its ashes started before the ashes were cold. The Pacific States Refineries Company is an independent company, of which Wm. A. Drennan is president and M. H. Isoard secretary. The plant is located in Fruitvale, on the estuary.

Important Water Agreement

The following Coalinga companies have entered into a most noteworthy agreement to protect their allied interests from the nearly irreparable damage done by the infiltration of water into the oil sands underlying their properties, the agreement providing for a board of trustees to investigate and determine the cause of water infiltration in any of the wells of the parties to the agreement, all of whom agree at their own expense to “do all things necessary without delay to effectually shut out such infiltrating water, so far as practicable, from said oil sands.” The agreement gives the Board of Trustees the right to enter the property of any of the undersigned companies that fail to act upon the findings of the Board within ten days, and attend to the leaking well at the expense of the company owning it, and to bring suit or suits to collect the amount due. The agreement further provides an equitable assessment plan to raise the money to maintain the work. The companies which have made this important agreement are: California Oilfields, Ltd., Kern Trading & Oil Co., Standard Oil Co., Associated Oil Co., Nevada Petroleum Co., Traders Oil Co., American Petroleum Co., Union Oil Co. of Cal.

MISCELLANEOUS

Standard Oil Drilling Test Well Far to North of Northernmost Coalinga Producer

Fully two miles to the north of the present northernmost producing oil well in the Coalinga field, the Standard Oil Company is now drilling a test well which, if successful, will add a big productive territory to the proven Coalinga district. A year ago the Standard's “Sontag 80” was successfully completed in a new formation which had been expected by the company's geologist, Dr. Starke, the oil obtained being very high gravity and paraffin base. The Standard is, of course, anxious for high gravity oil; the higher the better. The new test well is being drilled in the expectation that high gravity oil will be obtained, and the company is prepared to go deep for it.

The “Wildcat” is located in the very corner of the southwest quarter of section 27, 18-15. A camp was erected, rig constructed and material hauled to the scene during the latter part of March. Presumably the name of the new well will be “Domengine No. 1,” since it is on the Domengine tract, consisting of 2,300 acres recently leased. The property under lease covers sections 33, 34, 27 and 21, 18 S.-R., 15 E.

If the No. 1 Domengine is successful a new hole will be started on section 21, a mile north.

The General Petroleum Company put down a well in this district several years ago, but quit at a comparatively shallow depth. It will not be at all surprising if results here parallel those in the newly proven Kern River front, where the General Petroleum quit and the Standard was successful.

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Annual Reports

Annual Report of The Union Oil Co. shows the following:

Net profit for year 1913.....	\$ 2,526,230.51
"Operating profit," 1913.....	3,663,283.34
Dividends paid during year.....	1,311,780.63
Passed to surplus.....	1,214,449.88
Gross sales	20,230,620.37

The net oil production on the properties of the Union and "owned" companies totalled 4,838,338 barrels, an increase of 361,307 barrels over the 1912 output. The company had 228 producing wells on December 31, was drilling 34 new wells and deepening 4 old wells. The company's average cost of production decreased $\frac{1}{2}$ cent per barrel from the 1912 cost per barrel. Additions to the account of steamships and tank cars during the year aggregated \$526,675.54. Betterments and additions to the refineries, and installation of the big compressor plant at Orcutt, totalled \$484,501.15. The refining business shows large increases in volume of manufactured products, but prices ruled lower. A loss of \$40,000 was sustained from the fire in the asphaltum plant at Oleum. A significant statement included in the report was: "The total debt of all kinds, direct and indirect, secured and unsecured, is **less than thirty per cent** of the tangible assets at book values." * * *

Another very interesting paragraph states: "Proportion of profits of controlled companies in 1913 was \$1,026,271.75. This contrasts with a proportion in 1912 of \$835,863.86, and shows an increase of \$190,407.89. The increase is due chiefly to the better earnings of the Producers Transportation Company, the doubling of whose pipe line from Junction to Avila permitted large increases in the amount of oil transported without a corresponding increase in expense load."

Since January first of this year additional steel tankage has been ordered and is being installed for storage capacity of approximately 1,250,000 barrels. The report concludes by stating the Company enters upon 1914 in better condition than at any time in the past and expresses confidence in the future.

Annual Report of the Associated Oil Company, read to shareholders at the annual meeting in San Francisco on April 7, showed the following for the Associated and its proprietary companies, the Associated Supply Company and Bakersfield Iron Works, for the year ended December 31, 1913:

Business earnings after deducting all operating expenses, maintenance, transportation, etc.....	\$4,667,534
Fixed charges—	
Taxes	\$136,798
Interest on bonds.....	784,254—
	921,052
Balance	\$3,746,482
Depreciation reserve reinvested in the business	1,924,070

Balance to profit and loss.....\$1,822,412

The report states 1913 was a decidedly better year than 1912, but that "it was not a satisfactory year in

the fuel oil business." Also that the Company realized more per barrel on both their own product and their purchased oil; also that they curtailed drilling to meet the "overproduction" conditions; that their storage increased 488,529 barrels over 1912 storage, aggregating 8,595,145 barrels of oil on December 31, 1913. Also that they had had the tanker "Buck" constructed and that she will be ready for service about May 1st; mention being made of the little gasoline carrier Avon, in service between the Avon Refinery and Bay points. The Avon refinery was completed and running to full capacity during December; the refinery cost \$724,937, and during the last four months of partial operation in 1913 earned \$132,257, about one-fifth its cost. A list of distributing stations was given in the report, these costing the Company \$188,167. Other stations are under construction. The Company completed 29 wells in 1913; but shut in 281 wells in Kern River last October. Dividends of \$1,200,000 were paid in 1913—two payments of \$600,000 each, the total representing 3 per cent on the outstanding stock. There was no increase of bonded indebtedness, nor will there be.

General Petroleum's Annual Report details many matters extremely interesting, not a little of it being devoted to the miseries of difficult financing, caused by the "financial stringency through the year, which has made it extremely difficult and at times almost impossible to secure necessary funds to carry on the Company's work." After detailing the successful flotation of \$3,000,000 short term notes, the report states that the directors "entered into an agreement with the British General Petroleum Company, Ltd., of which you have been fully advised," and then follows the statement that earnings were not as large as anticipated because of the necessity of forced sales, due to extreme competition, and then an "overproduction of light oils, flooding the market with gasoline and distillates" just when the Company was about to increase the capacity of its refinery. Business battles are fought between the lines briefly setting forth the troubles of the young Company, but, says the report, there is now a better demand for oil and the Company is participating in it. The Company handled 6,915,222 barrels of oil in 1913, of which 3,679,371 barrels was its own production, the remainder being oil purchased and handled in connection with the Company's contract with the Santa Fe Railway Co. The Company stored oil on hand totals 1,522,256 barrels, all carried in steel tankage. Another half million barrels steel tankage has been authorized and is under construction. While no work was done on the Mexican holdings, development work by surrounding operators went "a long way toward proving that a good portion of the Company's holdings are very valuable. The Company has paid \$933,333.33 on its option on the Union Oil control. The Company completed 41 wells, which made a total output of 1,193,637 barrels. The 8 Lost Hills wells and the Buena Vista well are flowing and have been since brought in. The net profit for the year, after deducting all interest and other charges, was \$80,112.72, as shown by the audit of Price, Waterhouse & Co., and a surplus of \$119,512.39. A mighty fine showing considering the awful financial sledding to attain it.

Interesting Developments of Recent Date

The Independent Oil Producers' Agency members received 37 cents per barrel for the February sales.—the same as for January. Shipments totalled 1,120,000 barrels, an increase of 20,000 barrels over the January shipments.

Associated Oil's Refinery at Avon is in excellent shape, running to full capacity, 12,000 barrels of oil daily, from ten stills. The Associated's products are divided into the following classes: Gasoline of 61 degrees gravity; benzine, 56 degrees; engine distillate of 52 degrees; stove distillate, 38 degrees. The company's power boat "Avon," makes trips from the Avon refinery to San Francisco Bay supply stations as required. The products are finding a very ready market. The probability is that the company will be forced to enlarge its refinery to keep pace with its business.

Loss by Fire: The Columbia Oil Producing Company lost eight oil tanks and about 3000 barrels of oil when a fire started in one of the tanks being repaired, believed due to a spark from riveting work. The total capacity of the destroyed tanks was 7200 barrels.

The National Supply Co. is reported to be "enlisting" a large number of California drillers, rotary and cable, for service in China in the employ of Standard Oil of New York in its development of the Chinese oil fields.

The Adeline Consolidated Road Oil Company and the Fulton Fuel and Road Oil Co. are reported optioned to a London syndicate. Both companies produce an extremely heavy oil, very valuable for roads. The properties lie in the heart of Maricopa—almost in the business district.

Pyramid Oil Co. is putting down a new well on the S. W. quarter of their 40-acre lease in section 26, 31-22, Midway. The State Consolidated very recently brought in a well at 985 feet depth from which the output has been reported at 250 to 300 barrels daily of 19 gravity oil. The State well has about 125 feet of oil sand and no water to shut off. The Pyramid's well is a quarter of a mile directly north of the State well and they look for the same formation at a depth of possibly 100 to 200 feet further down. Seven rigs have been constructed in the immediate neighborhood of the State well by surrounding land holders since it came in. All of them will soon be drilling.

United Oil Co. produced approximately 46,000 barrels during February, receiving therefor about \$23,000. We have not the March output and returns at hand yet. C. F. Whittier is president of the United; Frank Fether, field superintendent.

To Operate Again

After having been idle nearly five years the property of the Hanford-Sanger Oil Company, located in the Sunset field, is again to be operated. According to our informant the stockholders have very recently decided to redrill the property, the operations to begin within the next 30 to 60 days. All the wells are shallow, in the top sand. The second sand, which should be reached at about 2,000 feet, is looked to for a good production. Our informant says two wells will be worked steadily. H. E. Woods of Los Angeles is among those interested in the company.

Standard Oil is enlarging its Richmond refinery tremendously and to keep pace with its growth is now laying another 8-inch pipe line down the San Joaquin Valley, this being the fourth. The growth of the company's investment and business the past four years, has been nothing short of marvelous.

The Standard is now laying a **fourth** high pressure pipe line between the Kern County fields and the Richmond refinery. It is said that \$10,000,000 will be expended in the enlargement of the Richmond refinery, the construction of the new pipe line and increased facilities generally.

Standard Oil has an immense gas well in section 36, 31-23, Midway—flowing 20,000,000 feet daily. The well has caught fire and is reported blazing furiously. To conquer it will require an immense amount of work and no little money.

A. L. Wisner and John J. Meyers were found guilty at the second trial in New York of using the mails for defrauding in selling valueless stocks by misleading advertising, throughout the country. Both men were sentenced to six long years in the federal penitentiary at Atlanta, Georgia, while in the case of Meyers a fine of \$10,000 was imposed in addition to the jail sentence, despite the fact that both took the pauper's oath. The judge appeared of the opinion that Mr. Meyers had a "cache" of gold out here somewhere.

German Oil Monopoly Bill. On March 27, Secretary of State W. J. Bryan instructed the American Ambassador to Germany to look into the Oil Monopoly Bill now before the Reichstag, to determine whether American interests are "jeopardized" by same. If so, our Government will enter a protest. The American interests to suffer would be Standard Oil. A number of independent American companies have signed a petition requesting the State Department to make no protest, with the idea, evidently, that if the Standard interests are crippled, they will be benefitted.

Combined Oil Company's board of directors issued on March 19th, a letter to shareholders in which they stated the terms of their lease required that three wells be drilled during the coming year on the North Midway property to avoid forfeiture; that the Company's indebtedness at the time of letter was close to \$50,000; that "in addition to the expected returns from the oil produced, for the purpose of completing the development work required on the North Midway lease during the year, paying expenses for the same period, and **fully liquidating the Company's indebtedness**, the sum of \$65,000" will be required. Two assessments are therefore proposed to be levied, the first for two cents per share, the second for one cent. The letter positively states that the payment into the treasury of the sum mentioned will pay the company's indebtedness, and "the income derived from the product of this lease will be free to be applied as the stockholders may direct."

After the conversation the "Derrick's" representative had with President Dean last month, it was his impression that the Combined was on the highroad to success, that dividends would be forthcoming the latter part of 1914 and that there would be no more assessments. The notification of two more assessments was, therefore, a surprise to us.

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In the April issue, A. P. McLaughlin writes a report on the Midway and Sunset Fields. A. T. Parsons tells of 'Graphic Studies of Oil Formation.' Other articles are 'The Diesel Engine,' 'Petroleum Production in Peru' and 'Oil Refinery in Persia.' This issue also contains descriptive articles on other engineering work being done on the coast.

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COALINGA

Condensed from Guy H. Salisbury's Special Report

Activity Resumed. Activity is resuming throughout the Coalinga field and there is not a man available in town, capable of field work. For a time the town was filled with idle men, when the leases shut down operations, so that all those who could do so left here. Now the drills are pounding again, material is being hauled to new well locations and the field has waked up in fine shape. Particularly pleasing is the fact that here 40 cents per barrel is being offered by the Southern Pacific Company, through the Kern Trading and Oil Company. Many operators believe the price will advance to 50 cents per barrel for fuel oil by June of this year.

Coalinga Mohawk has cemented well No. 6, on sec. 12, 20-15, at 4121 feet; the management expects to complete the well in the next 100 to 150 feet.

United Development, sec. 17, 20-15, has installed a 1250-barrel shipping tank.

Tank Farm of the California Oilfields, Ltd., now the "Dutch-Shell" people, located on the S. W. quarter of sec. 4, 20-16, is being rapidly constructed. There are nine tanks, of 55,000 barrels capacity, under way, 100 men being employed. It is reported that the Limited contemplate the erection of 52 tanks having an aggregate capacity of 2,860,000 barrels of oil, ere the tank farm is finally completed. This, in addition to the 750,000-barrel concrete storage reservoir, will give a total of 3,610,000 barrels.

Kern Trading & Oil Co.'s well 21, on sec. 35, 19-15, completed at a depth of 3724 feet, with 6¼-inch casing, came in good for about 1500 barrels per day of better than 29 gravity oil, the product being claimed as a "paraffin base" oil. The formation is 125 feet thick—a matter of the utmost satisfaction to the Company. Not an ounce of oil was wasted in bringing in No. 21. The rumble of gas had given warning that was instantly heeded by those in charge and a heavy gate valve was put on and the tools worked through it. The big flow comes through a 1¼-inch steel nipple; otherwise there would probably have been a blackened derrick and a gusher run wild, with the usual waste in such cases.

Turner Oil Company, it is reported, may erect a gasoline plant on its property at a point below the Fresno road. Wells 5 and 6 are producing a very large amount of gas above that necessary to fire ten boilers and illuminate the camp.

California Oil and Gas Co. will redrill its No. 2, on sec. 6, 21-15, operations to begin immediately.

Premier Oil, sec. 24, 20-14, redrilling well No. 5 to the deeper sand.

Lacy Oil Co.'s well in Devil's Den district remains shut in, believed due to the operators' desire to see what conditions the present oil legislation will impose, and what protection will be afforded, if any is afforded, before developing further.

Marathon Oil Co.'s well on section 13, 25-18, Devil's Den, has run into oil at 1570 feet, with the 8-inch string. Drilling be continued until a commercial production is sure. The oil is said to be heavy and a lighter product is expected further down.

SANTA MARIA

By Our Special Santa Maria Correspondent

Santa Maria feels the general oil awakening, as is evidenced by several recent property transfers, drilling activity, and installation of compressor plants. There is nothing of the boom spirit however—all the operators make the same remark, that while "the outlook is excellent, it's pretty quiet at present." The tendency is towards economy. Nowhere in the oilfields of this State are properties run to better economic advantage than here. The idea is to make everything the well produces yield a profit. And the idea is being successfully followed out.

The Pinal Dome Oil Company has the largest gasoline from gas extraction plant in California. Of all the up-to-date companies in the field or the state none has anything on the Pinal Dome for high class operating. The gasoline plant extracts three different grades of gasoline from the gas collected from the company's oil wells, the highest grade being so volatile that if the hand be cupped and poured full, there will be a bubbling and sizzling for an instant, and the hand will be empty and bone dry. There is a young genius in charge of the plant—Jones is his name—who has just within a few days had a new engine constructed that will double the capacity of the whole plant. The Derrick will try to have someone capable of correctly describing the plant and new engine, present the full details concerning its operation. Automobileists in Santa Maria say there is a "kick" in "Pinal Dome Perfection Gasoline" that is unequalled in any other. The company is doing considerable tool work at present, cleaning, deepening and drilling new wells.

The Rice Ranch Oil Company has purchased the Purity Gasoline Company's plant on the Rice Ranch property, from which an output of about 700 gallons per day has been obtained. It is reported the company will add another unit to the plant. The Rice Ranch has recently acquired the Bradley Canyon Oil Company's property—details not furnished.

Santa Maria Petroleum and Pipe Line Company has a splendid new producer, making at least 300 barrels daily on the beam. Two good sized sumps are filled with oil. The well is making a great deal of gas, heavily impregnated with oil, and belches constantly.

Dome Oil's well on their 536-acre tract south of the Tognazzini Estate is making 100 barrels daily; depth 3600 feet.

Palmer Union Activities

Palmer's production on air has increased at least one-third on the five wells now using the system installed by the Harron-Ricard-McCone air expert, J. P. Simmons. The new system is very economical; the saving claimed for it being 75 per cent of the labor in production expense, elimination of the constant replacing of wornout parts, and the very large increase in production. Palmer is shipping all its oil. There are still two wells on the pump, numbers 1 and 2, making respectively 150 and 250 barrels daily. No. 5 was making 800 barrels daily on air a little while ago, but got to throwing out so much sand that the production was much lessened, but now the output is increasing again. The

company has just suffered the loss of its boarding house which was completely destroyed by fire.

The Santa Maria Gas and Pipe Line Company, has made an arrangement with the Palmer Union to sell its oil on hand, and what it produces, for some months. The oil on hand amounts to about 10,000 barrels. The oil will be piped through the Palmer Union line from the Stendel tract to the loading station of the Pacific Coast railway on the Palmer Union Blochman tract and shipped from there to the Hadley Asphalt plant where it will be made into asphalt and shipped direct to foreign and local ports. The distillate recovered from refining the oil in making it into asphalt will be returned to the Palmer Union.

GENERAL NOTES

Among the Big Producers

The Record Oil Co.'s gusher is reported to be making over 5,000 barrels per day.

The St. Helen's Petroleum Co.'s well on 32, 21-24, Midway, came in recently with a flow of 1000 to 1500 barrels daily; gravity was 28 degrees.

The wonderful Birch gusher in Brea Canyon is still making over 1200 barrels daily. This is by all odds the most valuable well ever drilled in California.

Standard Oil's No. 7 Emery, in the Coyote Hills, is reported to have made approximately 1,200,000 barrels since October last—that is, in five months. Oil, high gravity. Value to Standard estimated at \$3,600,000.

Monte Cristo Oil Company has got a big well in Robertson No. 1, the same in which the big blow out occurred about four months ago. About two months back the well was completed but was a disappointment to the management, which believed that where there was so much gas there should be more oil. Acting on this belief the hole was drilled 200 feet deeper, completed and is now making approximately 2000 barrels of 23 gravity oil per day. It is a bonanza for the Monte Cristo Company.

Union Oil Co. has added to its fleet two tank ships, the "San Joaquin" and "Elsinore," chartered abroad. Another tanker of the same capacity, 65,000 barrels, is on the way from Europe to join the fleet. This additional capacity will be very advantageous to the Union-Agency in marketing. The Union is again made the defendant in another suit brought by the government, the grounds being that the company is operating on withdrawn land. The land in question is the S. W. quarter of section 4-11-23, Maricopa, 120 acres of which is now being operated by the Union.

Union Oil will install five 600-barrel stills at its Olenm refinery for the manufacture of gasoline and lubricants.

The company got a big well in its No. 14 Graham-Loftus lease, La Habra Valley, a few days ago, when it came in with a flow of close to 3000 barrels daily.

Messrs. Andrew Wier and R. Tilden Smith of London are again in California. They are said to be arranging the final details whereby the control of the Union Oil will pass from American ownership.

Montebello Oil's production is reported to be about 20,000 barrels per month at present time.

The California Oilfields, Ltd., subsidiary of the American Gasoline Co., has purchased a tank farm site of 80 acres, located in section 2, 31-22, between Midway and McKittrick.

-:- STOCKS -:-

Following are the latest San Francisco quotations on listed companies:

San Francisco Quotations

COMPANY	BID	ASKED
Amalgamated Oil	\$80.00	
Associated Oil Stock.....	40.00	
Brookshire .....	.20	
Caribou	1.17 1/2	\$1.50
Claremont .....	.23	
Coalinga Central .....	.20	
Coalinga Mohawk .....	.70	1.00
Illinois Crude .....	.07	.08
Monte Cristo .....	.92	1.05
New Penn. Petroleum .....	.10	
No. Am. Oil Con.....	.50	.75
Pacific Crude Oil.....		.15
Paraffine .....	.10	
Palmer Union .....	.02	.04
Premier .....	.14	
Republic .....	.10	
Rice Ranch .....	.50	
S. F. & McKittrick.....	12.00	
Shawmut .....		.50
Sovereign .....	.08	
S. W. & B.....	.10	
Sterling	1.12 1/2	

The Ferris Leasing Bill is expected to "go through" Congress in one form or another at a very early date; but it is also expected the bill will be very different than as originally drafted. Relief for operators on withdrawn property is hinted at in a news dispatch from the Capitol, wherein it was stated that executive consideration of the Bill would begin on April 7, after hearings extending over the period since March 25, during which time Commissioner of the General Land Office, Clay Tallman, urged that "despite irregularities the present locators and operators should be given some equitable relief and then put under the general leasing plan. Representative Lenroot of Wisconsin presented a draft of a separate bill to meet the California situation, under which the Secretary of the Interior temporarily would retain as royalty part of the oil produced and hold it until the patents were issued or refused for the lands. This would meet the objection that under the present conditions the oil is being drained by holders of adjacent lands."

That the legislation will be influenced by the Californians representing the Oil Industry, there is no question. For instance, instead of two years being the time limit for developing oil production prior to taking out a lease, from three to five years is likely to be granted, as suggested by R. S. Hazeltine. But from this distance there is little opportunity to know what is being done and a discussion of possibilities is therefore a waste of time. When the law is passed The Derrick will publish it. The original document is certainly filled with objectionable features, which it is to be hoped will have been at least partially eliminated by the efforts of the California delegation now in the Capitol.

Obispo Oil Co.'s No. 3 is reported as maintaining its output of more than 7000 barrels daily.



Vol. VI.

San Francisco, Cal., April, 1914

(Issued May 10)

No. 9

The National Importance of Oil

Excerpts From Dr. David T. Day's Address
Before the Franklin Institute.

The following excerpts from Dr. Day's recent address before the Franklin Institute, will, we believe, be of **unusual interest** to the Derrick's readers, who will not fail to grasp their great significance:

"The amount of oil refined and the amount now used for other purposes are now merely questions in the United States of a market for the resulting products. If all our oils were used in the United States and not exported, the oils of the East and of Oklahoma would be an abundant source for all the desired kerosene, and perhaps gasoline as well, but about one-fifth of all our oil is exported in one form or another, especially kerosene.

"As each year goes by, technologic improvements in the treatment of petroleum make this material more flexible for suiting all market demands, so that in general it may be said that enough oil is refined to meet the foreign and domestic demand, first, for kerosene and gasoline; then attention is given to the much smaller and more easily satisfied demand for lubricating oils; and, finally, to the ever increasing demand for paraffin wax. The rest of the product can always be gotten rid of at fairly lucrative prices for fuel oils. In fact, **the price for fuel oil has almost doubled in the last five years.**

* * * *

"The California contribution is the really flexible quantity. It can be used in so far as necessary for refining purposes, but principally as a great source of fuel oils and road asphalts. This supply of fuel oil will enter significantly into Eastern commerce with the opening of the Panama Canal.

"**Imports.**—Two other sources add to the total supply of the United States (beside the U. S. fields Dr. Day previously mentioned in his address); namely, considerable imports of heavy Mexican crude oil, suitable principally for road asphalt and fuel oil. **This Mexican importation will undoubtedly steady the price of fuel oil in the next year (1914),** as some twenty of the largest tank steamers afloat have been built for this trade and will bring large quantities to the Eastern ports. (Mexico does not appear a reliable country to

depend upon for oil for the next year, at the present, which will leave this market open for CALIFORNIA OIL.) The second source is light distillate, yielding large proportions of gasoline and **coming from Borneo and Java to Pacific ports.** Thus while we are exporting gasoline on the Atlantic coast we **import it on the Western shore.**

"**Our Relation to the Rest of the World.**—The total production of petroleum in the United States is now, roughly, 240,000,000 barrels. This means two-thirds, and more, of all the petroleum produced in the world. And yet the first development of commercial significance took place barely half a century ago. There is now no sea whose waters are not churned by the propellers of oil-burning steamships, no country whose roads have not seen the gasoline motor car, and no village in the civilized world in which the flame of kerosene or some form of petroleum does not illuminate some house, and thousands of miles of highway are kept free from dust, or otherwise improved, by petroleum oil.

"We owe our standing in national intelligence to the light of the kerosene lamp. We owe our greatest industrial characteristic—flexibility in manufacturing processes—to the national habit of reading. Kerosene light has been cheap, and is cheaper in the United States than anywhere else, and **it has prevented all other lights from following the high cost of living.**"

* * * *

(The Derrick considers the following paragraphs the most important portion of Dr. Day's address.)

"**Foreign Ownership of American Oil.**—Petroleum has had its share in developing American prestige. It has done more than precious metals or precious stones. Probably more people have used kerosene than have ever seen a gold coin. The petroleum and natural gas produced last year outvalued our gold, silver, lead, zinc, and all other metals combined, except iron and copper.

"I offer these quantities merely to stimulate the natural inquiry as to **how we are administering this trust of national, natural advantage; an advantage**

over less favored nations which it is a pledge of our patriotism to maintain. Are we maintaining it to the best purpose?

"We are not. In no line of national conduct is the progress so recklessly devoid of any thought-out policy. Besides a system of production which considers neither supply nor demand at home, we squander our heritage over the face of the earth, and we do worse. It may well be claimed as good public policy that our oil should spread out to less favored lands as the hand-maid of education where it will do the greatest good, and to this we must subscribe. No missionary can compete with a lamp, nor work without a lamp. But what broader than dollar greed can defend the sale of our greatest single weapon for national independence, **OUR OIL LANDS THEMSELVES**, to foreign capitalists, if not to foreign nations?

"Sir Marcus Samuel spoke in regard to this at the annual shareholders' meeting of the Shell Transport & Trading Company, Limited, in London, October 10th (1913). The speech was given wide publicity in the English press.

"The Shell Transport & Trading Co., Ltd., is an important part of the immense petroleum combination of Europe, known as the Royal Dutch-Shell group, dominated by the Deutsche Bank and the Rothschilds. Sir Marcus said, among other statements:

"The business is world-wide, and we are determined that the great distributing organization which we have created shall not be dependent upon any one field, or upon any one country, or upon any one government. We shall endeavor to acquire oil territories, so essential to the support of our organization, wherever they can be found.

"It is mainly in pursuance of this policy that we have purchased the 'California Oil Fields, Ltd.' It is in connection with that purchase that we are providing the large sums that we have asked you to subscribe.

"The business which we have obtained has been managed upon lines which commend themselves to us. From time to time properties have been purchased to strengthen the reserve of territory. The oil produced is among the very best obtained in California. We are satisfied that it is going to prove an excellent investment at the price we have paid for it, which was £400,000 in Shell ordinary shares and £400,000 in cash, 60 per cent. of which is provided by the Royal Dutch.

"The position of the companies in Roumania and in Russia continues highly satisfactory. In both countries we are the largest producers.

"In Mexico we have acquired, over carefully chosen territory, large areas at small cost.

"Borneo continues to show its extraordinary riches. It is the possession of that field which enables us to enter into contracts which we certainly would not commit ourselves to do without it. The wisdom of your directors in consolidating the interests of your company with those of the Royal Dutch Petroleum Company is proved constantly and daily.

"Other subsidiaries in which we are interested, and on which we have options on considerable blocks of shares at very much below current quotations, are doing well, and promise to increase the company's earnings."

* * * *

"The facts are open to every one, but recognized by few, that 25,000 barrels a day, over 12 per cent. of the oil in Oklahoma, are produced by foreign companies, and the foreign ownership in California is increasing even faster.

"The chief significance of this is that practically every foreign power is adopting oil in place of coal for its battleships, and a supply of oil is requisite for this purpose.

"There is no opportunity here to develop a policy, but there is an opportunity for directing thought, and I bespeak the influence of this time-honored institution, developed within the sound and in the spirit of our national Liberty Bell, in giving sympathy and counsel to our national government as to these problems when developing petroleum legislation."

(Ed. Note:—While black-faced type has been used in the above, to bring out the most important facts given in Dr. Day's address, this was done by the "Derrick" at its own discretion. Mention of the hold that foreign capital is getting on American oil fields was made in the last issue. Dr. Day fully corroborates our editorial.)

Oil Hearing Postponed

On motion of attorneys for the Southern Pacific Company, Federal Judge Dooling, sitting in San Francisco, on May 7, postponed for one week the arguments that had been scheduled for May 7 in the big suits of the Government against the railroad corporation for the forfeiture of patents to 46,000 acres Coalinga oil lands.

Accident Commission to Publish Decisions

Of considerable interest to employers and attorneys in the State comes the announcement from the Industrial Accident Commission of San Francisco that it is to issue its decisions under the Workmen's Compensation Act in the form of printed bulletins. The charge for this service will be \$1.00 per year. The bulletins will contain the full and correct report of all the decisions handed down by the Commission. The value of and necessity for this service to employers is obvious.

Retrial of Jameson-Wrampelmeier vs. Santa Fe Subsidiary pending.

Settlement of "Statement on Motion for New Trial" in the case which the Santa Fe lost when sued by Jameson, Wrampelmeier and Strassburger for draining their oil lands in the most bare-faced robbery scandal, of its nature yet known in the oil fields of this State, is now pending and will come up for hearing the first week in June. The Chanslor-Canfield Midway Oil Company held a lease on 8,000 acres owned by the three plaintiffs, which they were to develop but which instead of developing, they merely tied up under lease and then proceeded to drain the Jameson-Wrampelmeier and Strassburger properties by developing wells along the property lines of the leased ground, but on their own property, although repeatedly warned by Jameson and associates that if these vicious practices continued they would sue. The warning went absolutely unheeded. Suit was brought and tried before the famous mining jurist, Judge Pruitt, of Placer County, the result being that every contention of the plaintiffs was granted and very just penalties meted out. In Judge Pruitt's summing up of the case the Santa Fe people were handed the most scathing denunciation that probably ever was meted to an offender in a similar position, the Judge pointing out the fact the defendants had shown the utmost disregard for the rights of the plaintiffs, had acted as though there were absolutely no courts of recourse, ignoring entirely the protests of the people they were robbing. The Santa Fe people, of course, attempted to get a new trial and the present motion is part of the proceedings. The concensus of opinion among oil operators is that the Santa Fe deserves the utmost penalty the law can inflict.

The Great Union Oil Deal

Control of America's Greatest Independent Petroleum Principality, Which But Partially Developed is Valued at Sixty-Five Million Dollars, Goes to British Syndicate for Fifteen Million Dollars
Treasury Stock Purchase, Assuring Oil to British

Earl Grey, Former Governor General of Canada, Heads New Syndicate—Change In Control Means That Union Oil Will Supply Oil to Great British Shipping Interests With Opening of Canal
Former President Lyman Stewart Has Officially Announced Deal

Union Oil is financed!

Former President Lyman Stewart officially announced it.

Earl Grey, former Governor General of Canada, President of the new British Union Oil Company that takes over the control of the Union Oil Company of California, is here inspecting the properties, perfecting details and gaining an idea of the business, and has announced the names of some of the directors of the newly formed British Union Oil Company, which will be a holding Company.

Captain John Barneson, President of the General Petroleum Company, has confirmed the announcements, the Derrick having a letter from him in which he says: "Authorized statements have been published regarding the negotiations between the Union Oil Company and the British Syndicate, which will give you the information that the British Syndicate has agreed to purchase \$15,000,000 par, of Union Oil Company treasury stock, which will net the treasury of the Union Oil Company \$12,750,000. In order to effect this arrangement, the Stewarts have agreed to exchange their stock in the Union of California for stock in the British Syndicate, which with the treasury stock purchased will give the British Union Oil Company control of the Union of California."

There is no question about the truth of it: The deal HAS been made.

The greatest holdings of California oil lands, held by any one Company aside from the Southern Pacific lands, a virtual petroleum principality, aggregating TWO HUNDRED AND FORTY THOUSAND ACRES, has passed from American to British control. For a consideration of twelve and three-quarter millions of dollars, assets which will probably be found to aggregate TWO HUNDRED AND FIFTY MILLIONS of dollars before the Company's lands have been drained, have passed out of the control of the American shareholders. The Union needed the \$12,750,000.

The last Annual Report of the Union Oil Company, issued March 30, 1914, shows the present assets of the Company as follows:

Oil Lands, Rights and Leases	\$22,833,756.09
(Holdings, over 240,000 acres.)	
Oil Wells and Development, Tools, etc. . .	7,531,374.92
(Wells producing, 288; drilling 34, cleaning out, 4. Production, 1913, 4,838,333 barrels.)	
Pipe Lines and Storage System	4,223,438.36
(Not including interest in Producers Transportation or other Controlled Companies.)	
Steamships and Tank Cars	2,898,917.35
Refineries and Compressor Plant	2,460,515.67

Marketing Stations	3,384,447.59
Other Properties	521,173.88
Investments in Controlled Companies ..	12,528,158.88
Investments in Affiliated Companies,	592,707.69
Current Assets	8,290,845.81
Deferred Charges	169,697.58

Total\$65,435,033.82

On the above showing, every issued share of Union Oil stock at the present time should be worth around \$200. The market price is around \$70. The purchase of the fifteen millions par treasury stock at \$85 indicates more plainly than any other means of expression that the British realize the value of the properties as vastly greater than the market price. The deal was negotiated by the General Petroleum Company, through representatives, the General Petroleum holding the option on President Lyman Stewart's controlling interest in the Union. Those acting for the General Petroleum were E. J. De Sabla, Captain John Barneson, Judge Charles Slack, Victor Etienne and A. L. Weil, the Company's attorney. Lyman Stewart's interests were placed in the hands of John Garrigues, Treasurer of the Union. The British were represented by Andrew Wier, of the Shipbuilding firm of that name, R. Tilden Smith, J. C. Currie and J. R. Birbeck, a leading English solicitor.

The deal is a rather involved one. The Western Ocean Syndicate buys the Union Oil treasury stock and the control of the Western Ocean Syndicate is held in the new British Union Oil Company of which Earl Grey is President. Thus far, the Syndicate has paid \$2,500,000 down on the treasury stock purchase. The deal provides that former President Lyman Stewart exchange his shares in the Union Oil Company of California, amounting to about \$4,000,000, par for par, for six per cent, cumulative, participating preference shares in the British Holding Company. The holders of minority stock are given the opportunity to exchange on exactly the same basis as the Stewart stock is exchanged. The only difference in the negotiations between the minority shareholders position and that of the Stewart interests is that the latter will receive the additional million dollars for their option, when the last \$66,666 due on the option has been paid by the Western Ocean Syndicate, which has assumed the payment by its purchase of the option from the General Petroleum. With the treasury stock purchased from the Union, and the Stewart Shares, the English concern will own \$19,000,000 out of a total of \$46,000,000 outstanding. This in itself is not sufficient to control Union, but through a contingent agreement with the Stewart interests the Union Oil shares purchased from Lyman Stewart will be exchanged for Union Provident,

giving the British Company the control of Union Provident, which, in turn has control of Union Oil, the medium of control of Union Oil for the British being identical with the Stewart's manipulations thus far. Inasmuch as the Western Ocean Syndicate already controls the General Petroleum Company, it will be seen that the probable situation pointed out in the last issue of this publication has now become a reality, the Western Ocean Syndicate being now in control of nearly a third of the Oil Production of California, and a very powerful British interest in the State in addition to this, in the Royal Dutch-Shell subsidiary, the American Gasoline Company, controlling the California Oilfields, Ltd., and other very valuable properties.

Among those who will be prominently connected with the British Union Oil Co., Ltd., of London, that is to say, connected in the capacity of directors, will be several of those now acting in the same capacity for the Western Ocean Syndicate, Ltd.

Earl Grey, former Governor-General of Canada, and numerous other important things, will be president. Andrew Wier, the largest individual shipowner in the world will be a director, probably first vice-president, or what corresponds to that position on a British directorate. Lord Pirrie, President of the White Star Steamship Company, Sir William Owen, and H. N. Anderson, managing director of the East Asiatic Company, the Holland corporation that operates more vessels than any other Company in the world, Burmeister & Wain, the Diesel Engine manufacturers, and other very prominent persons, connected with the world's greatest shipping interests, are represented on the

Board. This has given rise here in San Francisco to a rumor that Union Oil of California is to be to the Shipping interests of Europe what the Associated is to the Southern Pacific. Others on the Board of the British Union Oil Company, Ltd., as announced by the newspapers, are the following: Sir William Edmund Garstin, director of the Suez Canal Company; Thomas Roydon, Deputy-Chairman of the Cunard Steamship Company; Col. Edward Ward, connected with the British War Department and Arthur M. Grenfel, of Chapline, Milne and Grenfel. The money represented on this Board is nothing short of fabulous. The British Union Oil Company, Ltd., is reported to be capitalized for \$60,000,000, the shares of which are all preference shares. Big dividends are expected from the California properties and plenty of money will be available for development. No change will be made in the personnel of the Union as now constituted, the efficiency of which is thoroughly recognized by the British. All dispatches coming from Los Angeles quote Earl Grey as expressing the utmost enthusiasm over the purchase of the Union's holdings, and British interests everywhere are rejoicing at the deal. Earl Grey is quoted as making the following very interesting statement:

"Our entry into the California field is but a forerunner of what is to follow after the opening of the Panama Canal, not only in oil but in all the other productive lines in California. California's fame has spread to all Europe and I look for an enormous increase in all lines of business on this coast. I hardly believe you people in California realize what is coming."

It is evident that when the Canal is opened, there will be a crying market for every drop of California Oil.

Wonderful Process for Refining Asphalt-Base Oils

APPARENTLY MOST VALUABLE REFINING PROCESS YET WORKED OUT CHANGES CHARACTER OF CALIFORNIA OILS — CHEMIST'S DISCOVERIES POSSIBLY MARK NEW ERA.

W. H. Stilson, a petroleum chemist at present living in Hollywood, has submitted to the California Derrick the following description of his remarkable process for converting heavy asphaltic-base oils into oils of lighter gravity by saturating the unsaturated hydrocarbons, thus changing the benzins into benzines and the undesirable smoky hydrocarbons and aromatic oil C_6H_6 , into the desirable C_6H_{12} , by using a catalyzer. Mr. Stilson states that satisfactory runs have already been made, using from 12 to 20 barrels per run, and that the process works out perfectly. Mr. Stilson's statement to the Derrick follows:

I began my experiments two years ago at Fort Arthur, Texas, and after the "heavier than 18 deg. Be. gravity question" came up in California (when the Standard discontinued the purchase of any crude under 18 degrees gravity), I came to Los Angeles, be-

lieving California offered a larger field for the success of my work.

My original theory was founded on a simple chemical fact: If salt is added to water in a glass by the spoonful and stirred, water becomes, after a time, a saturated saline solution; from that time on, all salt added will precipitate, but if more water is added the excess or unsaturated salt can be dissolved.

Applying this theory to oil, the asphalt is the unsaturated portion, and all required to saturate and convert it into oil is its own hydrogen gas, or other, liberated upon its coming into contact with a catalytic agent, held at a high temperature—1850 to 2,000 degrees F.; not over.

A catalyzer is an agent that hastens a reaction, although such reaction would eventually take place. The catalyzer is spread over bottom of still, or unit, to a

thickness of one-half to one inch, and fires started. When temperature of fire box has shown 1800 deg. F. for about an hour, oil is started into still through several feed lines having look-box and needle valves so as to regulate feed. This oil feeds upon the hot catalyzer, which is porous, and a breaking up of the hydrocarbons takes place, leaving pure carbon on catalyzer, like good hard coke. The vapors pass through condenser. At this time temperature at goose neck is 600 deg. F. and gravity 28 deg. Be.

Many different crudes have been run and the heavier the oil the better the results, as there are more unsaturated hydrocarbons to work on. From 11.7 Be. crude, results show 102.75 per cent. **by volume** of 27.8 Be. oil, which, fractionated, gave 5 per cent. of gasoline, 18 per cent. engine distillate, 20 per cent. kerosene, 18 per cent. stove distillate, and 39 per cent. lubricating bottoms, 251 vis. at 100 deg. F. These lubricants are of the desired green and all of the coal tar series are eliminated, doing away with the creosote which causes the "bloom." This being so, it is far easier to treat them, as the alkali breaks out readily. Also, in filtering, the charge of clay will last three or four times as long as it does in filtering an oil having the usual amount of creosote coloring or analine dyes.

The claims I make and have proved are as follows:

First, the asphalt is eliminated entirely, no matter how much the crude contained.

Second, from crude 11 deg. to 18 deg. Be. having no light ends and containing 30 to 50 per cent. asphalt I get 102.75 per cent. **by volume** of 27 to 28 deg. Be. distillate, having 40 to 50 per cent. of 50 deg. Be. and no asphalt.

Third, a superior oil for refining purposes.

Fourth, a process that will enable the producer to pump his heavy oil readily.

Fifth, the process does away with settling tanks and heaters.

Sixth, the cost being 3.7 cents per barrel of 42 gallons, makes it entirely practical.

Seventh, it is the oil for "Diesel" engines.

Eighth, by fractional distillation all percentages are increased.

The catalytic agents covered by patents are aluminum chloride, zinc chloride, kaolin, fullers earth, nickel salts, alundum, calcium chloride and china clay.

The minute catalyzer is spent, ammonia is liberated.

The weight of catalyzer, oil and carbon, equals weight of original crude catalyzed.

* * * *

Mr. Stilson says that those who have seen runs are John J. Baegalupi, Southern Refining Co., Harry Eller, Pres. Bank of Sherman, Dr. Richard S. Curtis, Throop Polytechnic, Dr. Mann, Mr. Davis and Mr. Faber, El Segundo, and Messrs. Doherty, Larritt, Donahue, Hutchinson, Andrews and Gilmore, before whom experimental runs have been made.

The California Process Company controls Mr. Stilson's process. The company consists of the following Los Angeles people: Jno. M. Regan and Jas. J. Regan, of the Regan Oil Tool Co., Sherman Junction (where the process has been perfected), Jos. W. Ford, Asst. Dist. Attorney, Jas. Doherty, Mgr. Westminster Hotel, and W. H. Stilson, inventor and chemist in charge.

Mr. Stilson is at present engaged in constructing a commercial unit at Bakersfield which is expected to be running by June 15. Associated with him in the enterprise are the Producers Refining Company, John M. Regan of the Regan Oil Tool Co., and George Derby.

Production, Consumption and Field Operations During MARCH.

(Standard Oil Figures.)

Production.

All monthly production records were broken by the March output, which reached the tremendous daily average of 286,591 barrels per day, a total for the 31 days of 8,884,321 barrels of oil! The Standard production statement credits the increase to the Midway-Sunset field, "which shows a gain of 10,000 barrels per day over February." A matter of extreme interest, which the "Derrick" made reference to last month, the shut-in production, is taken up in the report, which states—"Shut-in production, largely in the Kern River and Coalinga fields, remains constant at 14,000 barrels daily." This means that in March, with the wells now shut in on production, California could have produced **300,591 barrels per day**. As it was, the production exceeded the highest former daily average, that for August, 1913, by 2488 barrels. A comparison with the figures in the last issue of the Derrick will show what variation there was in the daily output of the various fields.

Consumption, or shipments, was the greatest on record, being only a few thousand barrels behind the record production; consumption totalled 8,833,769 barrels. This is at the rate of 106,605,228 barrels for the year. California will have to "go some" to produce the amount that must be supplied this year.

Field Operations became much more active during March than in February. In order to show the changes in field work we include the February summary for comparison with March: February, new rigs, 33; drilling, 244; completed, 36; abandoned, 4; producing, 5,858.

Storage is now almost 50,000,000 barrels; little enough in view of the immense monthly consumption.

Following is the detailed statement:—

FIELD	New Rigs	Drilling	Completed During Month	Abandoned During Month	Producing	Production Per Day
Kern River	3	7	3	..	1,382	19,715
McKittrick . . . . .	..	3	..	2	266	10,740
Midway and Sunset. 30	88	16	..	1,262	141,978	
Lost Hills and Belridge	7	14	2	1	194	13,444
Coalinga	1	25	4	..	844	43,678
Lompoc and Santa Maria . . . . .	..	11	..	..	222	12,025
Ventura County and Newhall	6	26	3	..	403	2,846
Los Angeles and Salt Lake	1	6	..	6	682	7,124
Whittier-Fullerton ..	17	74	5	..	517	34,815
Summerland . . . . .	..	..	..	..	122	152
Watsonville . . . . .	..	..	..	..	5	75
Salinas Valley . . . . .	..	..	..	..	.....	.....
Total	65	254	33	9	5,899	286,591
Total crude oil stocks, March 31, 1914, 49,847,770 barrels.						

Total crude oil stocks, March 31, 1914, 49,847,770 barrels.

Total shipments from fields, March, 1914, 8,833,769 barrels.

Standard Oil has brought in a new well, Emery No. 5, which is doing 1000 barrels per day.

California Derrick

The Oil Authority of the Pacific Coast

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

The First Quarter of 1914—

A Remarkable Record.

For the quarter ending March 31, California oil production was 25,576,914 barrels; consumption, 24,440,196 barrels. The April figures, which will come to hand about the 23d of this month, will probably be smaller than for March, but not a great deal smaller. This year will probably be one of the "banner" years of California production. A glance at the first quarter's output shows the daily average thus far to have been each month in excess of 280,500 barrels. The table will aid in fixing the magnitude of both production and consumption, for the first three months, well in mind:

	Production (Barrels of 42 gallons each)	Consumption (Barrels of 42 gallons each)
January	8,736,885	8,239,363
February	7,855,708	7,367,064
March	8,884,321	8,833,769
Total	25,576,914	24,440,196

If there was 50,000,000 barrels of storage oil on April 30—which is approximately the amount of storage—there was not six months' supply above ground. The production California is apparently capable of making without the drilling of new wells at this time is 300,000 barrels daily. What the highest production California is capable of making will be, remains to be seen. Every year someone has said it couldn't be much more, but it **has been**. In this regard, the excerpts from Mr. Arnold's address will be of much interest—and the analysis of the March figures, found elsewhere, may also be of value to the reader. Returning to the subject of the first quarter's production and consumption, it should be remembered that the heaviest oil months, as regards both output and sales, are yet to come. And in our opinion they will certainly be unusually heavy months this year.

Beautiful!

Midst the troubles of the shareholders of other companies the shareholders of stock of the Standard Oil Company must view their shares as nothing less than perfectly beautiful.

* * * *

Mexico.

As a result of the horrible Mexican conditions President Wilson has ordered occupied and is holding Vera Cruz with American boys in blue, and soldiers. Of the sailor boys, seventeen have already returned, shot to death by "snipers" during the invasion. American battleships are outside Tampico, where war is waging fiercely with the so-called "constitutionalists" getting the better of it. The damage to oil property can be conjectured. Incidentally, no Mexican is a real constitutionalist and the country is not naturally a constitutional country; and the only constitutional government it will get will be under the Constitution of the United States, when the A. B. C. mediators have given the Americans still in Mexico a chance to get out, so that the subsequent civilization of the country can be accomplished by American soldiers with less outrages to American women and children and less foul murder of unsuspecting American men. At least, we hope it will turn out this way. What other course will assure peace? The Dove of Peace in Mexico perches on the gun that can hold down the country. This has been the case to date. Carranza might make a good provisional president under American control. As far as the oil business in Mexico is concerned, it is at present well on the way towards total paralysis, though some oil is still being shipped if latest reports are correct. California therefore comes in for much more appreciation as a desirable tidewater oil district of unbounded (as yet) supply where the government is such as to guarantee deliveries. This possibly has much to do with the favor with which the English evidently regard our oil fields as a good place to make sure of an oil supply. If it doesn't, it should.

* * * *

Other Kinds of Patriotism.

The wretched Mexican muddle, with all its attendant murders and deaths, has aroused a great deal of patriotism throughout the country. As there is now a lull in the storm, other kinds of patriotism might be suggested and even receive a hearing. Patriotism we take it, is doing something for the good of your country. Considering the smaller shareholders of the various companies would therefore be patriotic as benefiting them would benefit the country. In this connection there arises the little point of honesty to all; the matter of not freezing out the smaller shareholders; of paying dividends when possible instead of making a family sinecure out of a company financed on public funds; of not selling out the smaller shareholders—you readers know pretty well what is meant. The Derrick doesn't say these are at all common practices, but they are known to have been done. In fact letters in the possession of the Derrick show it has been done a good many times. Let's all hope this miserable kind of "business" ceases. Let's all hope patriotism, the real patriotism, takes its place.

* * * *

An Error Corrected.

After the issue of the last number of the "Derrick," the editor received from Captain John Barneson, President of the General Petroleum Company, a letter in

which he corrected an error that had appeared in the April 10 issue. In an article on the Standard's having gone into the North Coalinga Field, it was stated the General Petroleum Company had put down a hole there several years ago and abandoned it, and had done the same in the North Kern field, which the Standard had so recently extended. It is common knowledge that the State Oil Company of which Captain Barneson is president, owns sections 27 and 35 on the Kern Front and has leased them to the Standard. The Bardole Company, says Captain Barneson, drilled a well to a depth of about 1800 feet on 35 and then abandoned. The General Petroleum Company has no interest in either of these companies, and the Derrick made the error of confusing the operations of the Captain himself with those of the General Petroleum Company, of which he is president. Also, the General Petroleum Company never drilled in the north part of the Coalinga field as was stated, the hole to which we had reference having been drilled by the Peerless Consolidated, three years ago. The Derrick is always glad to correct any error that may appear in its pages.

Well Known Men Associated With Oil Industry Pass Away

Herman Frasch, the famous chemist whose process for purifying Ohio and Ontario oils enabled the Standard Oil Company to refine products which previously they had been unable to do much with, died in Paris on the first of this month at the age of sixty-two years. The dead chemist perfected many different refining processes and devices of utmost commercial value to the industry, and was unquestionably the leading petroleum chemist of the United States during the greater part of his commercial career. In addition to making a remarkable commercial success out of his petroleum chemistry, Mr. Frasch perfected a means of recovering sulphur from wells in Louisiana, meeting with such a great success that the importation of Italian sulphur received a death blow. The work of this great chemist serves as a better monument than anything which might be said, and his success should be sufficient incentive to the young chemists now alive to spur them to renewed endeavors.

John M. Keith—California recently lost, in the death of kindly old Mr. Keith, one of the most perfect gentlement it has ever been the happiness of the editor to meet. John M. Keith was of very advanced age when he passed away just a few days back, but up to the day of his death he seemed hale and hearty, with a pleasant expression of health and intelligence sparkling in his eyes. At an age when most people are entirely willing to give up active pursuits Mr. Keith embarked in oil ventures out of which he realized immense profits. One of his last oil ventures and one which worried him somewhat for a while, was the Spreckels Oil Company. This Company was not doing well, so Mr. Keith insisted that "Tom" Hayes, the former Coalinga operator who made his success in cementing wells, be placed in charge. In fact, he placed Hayes in charge personally, and since that time the Spreckels has had nothing but success, which pleased Mr. Keith so much that he had nothing left to worry over, and in this happy frame of mind was visited by the "Grim Reaper." The disposition of Mr. Keith's fortune has not yet been made public.

CHURCH OIL LAND LEASING AND CORRECTING BILL IS UNANIMOUSLY REPORTED BY HOUSE COMMITTEE

A most important news dispatch from Washington, dated May 5th, states that as a result of the united efforts of the Oil Land Legislation Committee of the Los Angeles Chamber of Mines and Oil, consisting of Dr. Norman Bridge, Chas. B. Barnes, S. E. Vermilyea, W. W. Orcutt and Franklin Pierce, Congressman Denver S. Church's Oil Land Leasing Bill authorizing the Secretary of the Interior to lease to occupants of unpatented oil and gas lands in California and other States, has been unanimously and favorably reported by the House Public Lands Committee. After a conference with President Wilson, Secretary Franklin K. Lane advocated the passage of the Church Bill before the Committee with the above stated result. Representative Church will arrange immediately to have the Bill placed on the Unanimous Consent Calendar and it will be passed by Congress this session without doubt. The Church Bill is expected to clear up most of the litigation now pending between the Government and a great many occupants of oil lands in Kern and Fresno counties. It supplements the famous "Yard Decision Bill," its chief provision being that upon surrender to the government of unpatented oil or gas lands on which oil or gas has been discovered, or on which drilling was in progress on January 1, 1914, and the claim to which land was made prior to July 3, 1910, the Government shall lease to such locator, or his successors, the land, not in excess of 640 acres. The bill first provided for a lease of 2560 acres, but this was reduced by Committee to 640 acres. The royalty to be paid to government shall not be more than one-eighth of the product.

The "Agency" is safe, as the so-called trust provision, relating to monopolies, and designed to prevent such, has been changed to allow the holding of as much as twenty-five per cent of stock in an agency or corporation engaged in re-selling the oil product, while rights of way across Government land will be granted to anyone on condition that such pipe lines are common carriers. The Derrick hopes to present the bill itself in the next issue.

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CHARLES CARROLL WRIGHT,

Publisher.

Sworn to and subscribed before me this 25th day of March, 1914.

(Seal)

EDITH W. BURNHAM,

Notary Public in and for the City and County of San Francisco, State of California.

(My commission expires January 30, 1918.)

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OIL RESERVE AND FUTURE PRICE OF OIL

By Ralph Arnold and V. R. Garfias

(From their book "Geology and Technology
of the California Oil Fields.")

Oil Reserve and Future Price of Oil.—The probable productive oil territory of California is to all intents and purposes outlined today, and the same statement holds good for all of the Pacific coast of the United States, for outside of California there is within the region mentioned, with the possible exception of Alaska, no commercial oil field, nor do the geologic conditions offer any hope of any important field ever being developed.

The proved area of California consists of approximately 100,000 acres, or 156 square miles, outside of which there is a relatively small amount of probable territory, and this latter area is becoming more and more restricted each year through the adverse results obtained in the drilling of test or "wild-cat" wells at the most favorable localities. This proved acreage contains an available reserve which the senior author has estimated at from four to eight billion barrels of oil, the variability in estimate being due to the uncertain effects which such factors as the ingress of water, etc., have on the quantity which can be recovered at a commercial profit. The oil production of California for the calendar year 1913 was about 97,000,000 barrels, which is the maximum for any one year up to date. At this rate of production, the California fields would last only 40 to 80 years, but it is quite obvious to any one who has studied the normal rate of decrease in the production of individual wells, even in a cursory manner, that it will take a most vigorous campaign of drilling to keep up the present rate, let alone increase it to any appreciable extent. Furthermore, within a short time the production will begin to decrease in spite of the most extensive drilling, as it has done in other States, so that it will require from 50 to 100 years in which to recover the available supply.

Roughly speaking, it has been found by experience that to simply maintain the production of any group of wells in California, it necessary to drill one new well each year for every five producing during that year. In other words, the normal decrease is nearer 20 per cent. than 10 per cent., as was estimated when the field gas pressure was high.

Although the production in California has grown rapidly during the past few years, the consumption has nearly kept pace. At present the oil storage in the State is about 50,000,000 barrels, or only about a six months' supply. For the first half of 1913 the surplus production over consumption averaged only 2,085 barrels per day; for October the average was about 18,000 barrels per day and practically all of this came from the flush yield of two or three big gushers which were recently brought in and the production from which is even now rapidly falling off. In estimating future production, the flush yield of gushers must be taken into account, but in this connection it should be borne in mind that these big wells are becoming less and less common and their period of abnormally large flow shorter and shorter as the fields become developed and the field gas pressure is consequently reduced.

As a concluding statement concerning production, it

is the senior author's belief that the total yield of California for any one year will never go much, if any, over 100,000,000 barrels and that the time will come within the next year or two when the maximum production will be reached, after which, the curve of production will be a descending one. Sneh has been the history of all of the older fields in this country and such is the logical result to be expected in California. With the increasing uses and markets for oil resulting in a constantly increasing consumption, it is obvious that the price of oil will go up rapidly the minute the general public realizes that the reserves are being drawn upon to meet the demand.

The standard for fuel values is coal, and compared with coal on the Pacific coast, heat unit for heat unit, oil is worth 93¢. per barrel at the well. Considering the many acknowledged advantages which oil has over coal as a fuel, and the many uses for which oil is more valuable than coal as a fuel, it will be clear to the thoughtful man that the price of even fuel oil will eventually go much higher than the standard set by coal. True, certain of the larger companies in the California field are not talking in an optimistic vein regarding the immediate future price of oil, but their almost feverish activity to acquire additional acreage and production speaks louder than words as to their real beliefs in the matter.

Commissioner of the General Land Office, Clay Tallman, has recently journeyed through the Kern River and Sunset-Midway oil districts with several other Government officials for the purpose of familiarizing himself with field conditions.

United States Geological Survey has just completed its preparations to send eleven survey parties into Alaska to determine the resources of the various districts to be visited. Information on the work to be done is of an extremely interesting nature.

Executive Committee of the Independent Agency has within the past few days sent to members of the Agency a communication in which the question is flatly put to the members if they will give to a sub-committee consisting of M. L. Requa, R. S. Haseltine and M. F. McQuigg sufficient information to make a just appraisal of the properties of all the companies comprising the Agency, for the purposes of apportioning the value of each Company to that Company in the stock of one great corporation to be organized for the sole purpose of taking over all the Agency Companies and operating them as may be most profitable, just as the Standard Oil Company does; or maybe as the Associated did, leaving the little shareholders to shift for themselves. It seems hardly likely that with every indication ahead of utmost prosperity the Agency members will surrender their own control as suggested by the committee.

Probably to escape the suspense, the Miocene Oil Company has asked Federal Judge Dooling, this city, to appoint a receiver to take charge of and hold its property until further order of the Court, which has been done, Archie Campbell of San Luis Obispo having been appointed. The Miocene is one of the several defendant companies in the big ouster suit which the Government has brought to get possession of certain lands in the Midway-Sunset district. The Company has very recently brought in a tremendous well, which flowed 15,000 barrels in a few hours, sandel, was brought under control and is now reported as making 15,000 barrels per day. Gravity is slightly under 26 degrees.

"Fell Down" on Bond Interest Payment—The Western Ocean Syndicate, the Wier-and-Smith corporation that purchased the General Petroleum Company and that Company's option on Union Oil of California, failed to make payment to the General Petroleum Company on May 1, at 10 a. m., of the \$370,000 interest money which they obligated themselves to pay to the Company when purchasing it, and as a result the General Petroleum Company was unable to pay off the May coupons of the General Petroleum's bonds, which were due at that time. As a result of this default a new deal is on to protect the bond holders. What is coming remains to be seen; but the bondholders, meantime, will wait for their money.

World Status of the Royal Dutch-Shell Combine

The Royal Dutch-Shell Combine, of which such a great deal has been heard within the last two years, is conservatively estimated to have produced 27,000,000 barrels of oil in 1913, or about 7½ per cent. of the world's total output. The Combine controls practically the entire production of the Dutch East Indies (Borneo, Sumatra and Java), amounting to about 10,850,000 barrels of oil annually; 7,000,000 barrels in the Russian fields; 3,500,000 barrels in Roumania; the balance of their output comes first from the United States and Mexico, and much smaller quantities from Egypt, Persia, Trinidad and other fields of lighter output.

In 1913 Standard Oil of California handled alone about half again as much oil as the Dutch-Shell Combine produced. That is, Standard Oil of California is estimated to have handled 38,000,000 barrels or over last year. Of this quantity the Standard's own production was, roundly, 9,700,000 barrels. Thus the Dutch-Shell Combine produced 17,300,000 barrels more than our greatest California corporation. Whether they handled as much as the Standard of California, the Derrick is not advised. The Union Oil Company last year alone handled over 20,000,000 barrels, of which it produced 4,838,000 barrels, the Union being the marketer for the Agency. One field alone in California, the Midway-Sunset field, produced last year over 39,000,000 barrels. The 27,000,000 barrels controlled by Dutch-Shell is 70,000,000 barrels less than California produced last year.

Perhaps the Dutch-Shell, in view of these facts, will not appear so formidable; but they are formidable, nevertheless, and they are getting stronger every day. They have come into California "strong." They are increasing their facilities day by day, preparing for the erection of a great refinery on San Francisco Bay, a pipe line from Coalinga to tide-water, an abundance of storage and distributing stations and facilities. They are here; and they are here to stay. But they have barely started here, as yet. Thus far their campaign has been one mostly of preparation and anticipation of needs of their customers when they are fully going. Outside of this State the Dutch-Shell have a fleet of 65 vessels to minister to their customers and they are doing a world-wide business. These facts are by no means generally known. They should, therefore, occupy considerable of the attention of the thinking producers, marketers, refiners and customers alike. Plenty of room for thought is afforded.



—Photo by W. J. Nichols, Coalinga Cal.

PORTION OF THE TANK FARM OF THE ROYAL DUTCH-SHELL'S SUBSIDIARY, THE AMERICAN GASOLINE COMPANY, IN THE COALINGA FIELD.

Seaboard Oil & Transit Company. The Derrick is in possession of a most exhaustive report on the history and present condition of this Company, the report having been written by Louis P. Boardman, Attorney for the creditors of the Seaboard, to enable a committee of three appraisers, consisting of Fred Hall, candidate for Governor of California, M. R. Craig and Angus F. Crites, to get an exact idea of conditions as they are, so that they may appraise the property of the Gate City lease of the Seaboard, in order to determine the real value to the Seaboard of the Gate City property, in accordance with a new arrangement or agreement to be entered into between the two companies, which will be fairer to the Seaboard if the appraisers find that too high a price has been paid for the Gate City property. Mr. Boardman has flatly insisted on this all along. The appraisal will be made in the very near future. It is expected that a considerable amount on the purchase price may be lopped off, benefitting the Seaboard shareholders in proportion. The report is thirty-three legal pages and reviews absolutely dispassionately the entire history of the Company and all the financial doings since its formation, as well as giving the exact status of the Company's condition at present. The report shows that 4,127,515 shares of the capital stock of the Company are issued, including the 2,000,000 shares purchased by the Gate City Oil Company; that with the single exception of the Gate City property the California properties of the Company, at the present time, cannot be made of productive value without "extensive development;" that the Section Six Lease, Templer property and ten acres of undeveloped property in the outer Kern River field have been "practically discarded;" that at the present time, "the Mexican property" * * * and the "Gate City Property" are the only properties which invite any interest so far as the business of the Seaboard Oil & Transit Company is concerned. Indebtedness of the Company has been mostly assigned to a trustee, on the condition that it shall be paid out of the proceeds to be realized from the development of the properties of the Company. From the inspection of the figures presented in the report it appears that the best course would be to entirely discard the Templer, Madison and Section Six properties and with them their indebtedness, realizing at the same time, if possible, something on the deal; this would do away with \$37,140.69 indebtedness at once. The output of the Gate City property was 57,674 barrels in 1912; of this all but 4000 barrels was sold. In 1913 the production was

30,000 barrels, of which 22,017 barrels was delivered, leaving on December 31, 12,000 barrels of oil stored in the sumps. In 1913, after June, the Company was among many other unable to deliver, without a market. In January and February of this year, approximately 6,700 barrels was produced, of which 1,700 barrels was delivered, and on March 1st, of this year there was in storage on the Gate City property 16,000 barrels of oil. On January 28 the Company contracted 100,000 barrels of oil to the Standard Oil Company at 40 cents per barrel. How much has since been delivered is not stated, but it is evident that the contract is good for \$40,000. In the new contract of purchase of the Gate City property by the Seaboard is intended that a good portion of the purchase price shall be in Seaboard stock and that the number of shares of the Seaboard now in the possession of the Gate City Oil Company, namely 1,830,521 shares, will be regarded as stock of the Seaboard and not the property of the Gate City; that credit will, of course, be given for payments already made by the Seaboard on account of purchase of the Gate City property and proper account will be taken of moneys expended for equipment and also of the expense of its operation by the Seaboard. In fact, every proposal made by the creditors' attorney is absolutely just and for the benefit of the shareholders of the Seaboard Oil & Transit Company.

Richard Graham, generally known to his friends as "Dick" Graham, brother of "Bill," we learn as we go to press, was dreadfully injured on the 9th of the month, in an auto wreck near his home on Tulare avenue, Berkeley. It was at first thought that Mr. Graham would succumb to the fractured skull, jaw and body bruises which he had suffered, but his remarkable constitution has thus far prevailed in keeping death from his door, which he doubtless owes to his outdoor life. The accident is a sad thing for the Graham family and the Graham friends.

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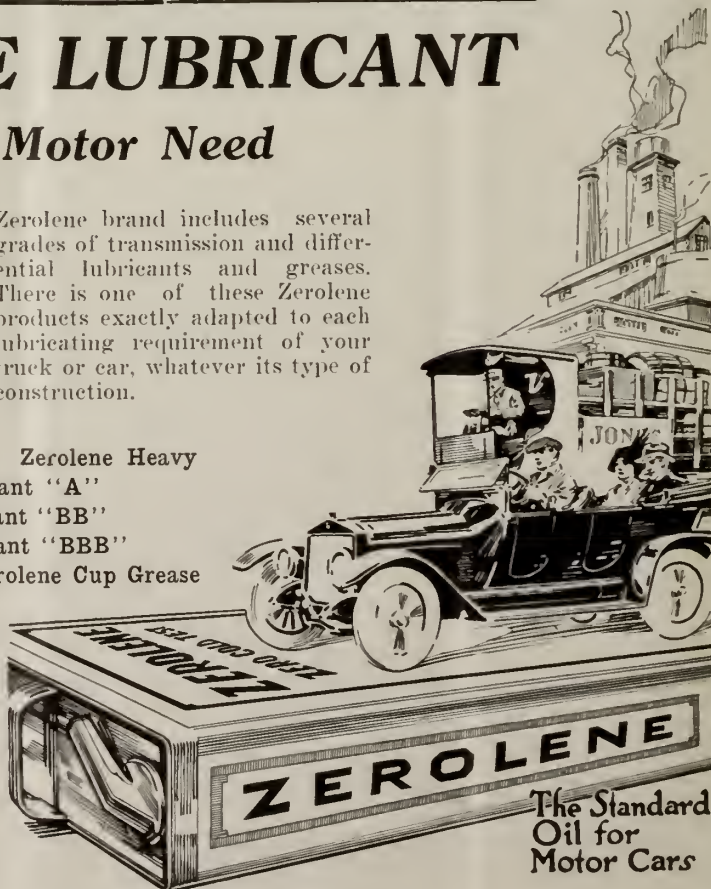
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THE PETROLEUM EXPORT TRADE

THE "DERRICK'S" COMPLETE REVIEW

Some of the very interesting points brought to notice by the Government's last export compilation will keenly interest both shippers and producers. For instance in March not a single barrel of crude was shipped from the two California ports, nor from Maryland, Philadelphia, Buffalo and Dakota; from half the shipping ports in the United States there were no crude shipments whatsoever, and this, from California especially, where crude shipments would naturally be expected in very large quantities, shows that burning crude is going out of style. Residuum is the reason. Residuum shipments in March totalled roundly 34 1-3 million gallons, valued at \$570,000.

But even more interesting than this occupation of the crude market by residuum, is a comparison of the quantities of crude shipped in March 1914 and 1913. Last year the March shipments totalled 13,317,277 gallons valued at \$541,553; this March past the shipments were only 7,612,844 gallons, valued at \$461,758. It is plain that there was an immense increase in the receipts for crude, this taking place in the East where the crude is high grade.

In illuminating exports San Francisco is second only to New York, although shipping less than half the amount of the great metropolis. The country's illuminating trade as a whole expanded 5,268,000 gallons over the trade in March, 1913, the money gain being \$912,825. Almost a million dollars gain in one month's shipment over the same period a year before.

New York and Philadelphia are, of course, the main shipping ports for lubricating and paraffin oils, standing alone in this respect. In March, New York shipments of these products totalled 11,554,984 gallons, valued at \$1,566,785. Philadelphia is second with 2 1-3 million gallons valued at \$334,728. Then comes Maryland, shipping \$1,067,326 gallons, valued at \$147,037. From no other of the twelve shipping ports was there as much as a half million gallons shipped in March. California's lubricating shipments amounting to less than 225,000 gallons, valued at less than \$25,000. The vast bulk of California oil and products is used in California and the States immediately bordering. It is interesting to note that March shipments this year were almost 5 1-2 million gallons below March, 1913 shipments, while receipts fell off not correspondingly, but to the extent of \$694,146. This oil must have been used here in the United States lubricating the new automobiles and other machines that oil's power has caused to be created.

The national shipments of naphthas and gasoline dropped off somewhat this March past as compared with March, 1913—about 500,000 gallons, but the price received advanced. The March, 1914, shipments totalled 13,365,640 gallons valued at \$1,940,567, while those for the corresponding month in 1913 totalled 13,853,235 gallons valued at \$2,047,020. California's shipments of these products are still light, owing to the home demand. This is the "per capita" auto State of the Union. For the nine months ending with March 31, the national shipment increased over the same period in 1913, from 98 1-2 million to 123 4-5 million gallons, the returns increasing from \$16,035,937 to \$18,523,860.

In exporting residuum, California is supreme. No

other port came within 12 million gallons of San Francisco's residuum exports in March. The table below shows California's total residuum shipments in March were 34,313,892 gallons, valued at \$571,238. But while California is supreme in quantity, shipping 2 gallons for Sabine's 1, the receipts at the latter port were \$586,659, or \$15,000 in excess! Will the Panama Canal's opening help this condition? Emphatically, it should! Our residuum is being sold **too cheap**. Undoubtedly it is this very cheapness, however, that has increased the residuum shipments for the nine months ending March 21, 1912, totalling 108,611,535 gallons valued at \$3,017,713, to 400,094,107 gallons valued at \$10,539,427, for the corresponding period ending on March 31, 1914. While this is the growth in the national residuum shipments, California is greatest factor in that growth.

The nation's total shipments the past nine months amounted to 1,637,670,399 gallons of all classes of oils, valued at \$110,351,633, showing the immense value of our foreign trade alone, in Oil. The growth of our exports in this period, over the corresponding period last year, is 210,000,000 gallons; the increase in receipts totalling \$13,472,232. It would seem a self-evident fact that the value to the nation of the Oil Industry is such that legislation which will affect the Oil Industry in any way, should receive before final passage the most careful and expert consideration that could possibly be given.

We present below for quick assimilation a table showing California's exports in March.

Exports of Petroleum Products From California in March, 1914

Commodities	Quantity Gallons	Value Dollars
No Crude shipped.		
ILLUMINATING:		
San Francisco	14,870,596	695,270
Southern California....	1,020	152
LUBRICATING and PARAFFIN:		
San Francisco	222,257	22,645
Southern California....	353	121
NAPHTHA, GASOLINE, ETC:		
San Francisco	219,440	25,093
Southern California....	630	161
RESIDUUM, GAS OIL and FUEL OIL, ETC.:		
San Francisco	29,725,848	499,421
Southern California....	4,588,044	71,817
TOTAL EXPORTS		
San Francisco	45,038,141	\$1,242,429
Southern California....	4,590,047	72,281
GRAND TOTAL	49,628,188	\$1,314,710

CALIFORNIA CONCENTRATES

Lake View No. 2, Oil Co., Maricopa Flat, has great gusher, flowing 10,000 barrels daily at 3,013 feet.

Standard Oil of Cal., will hold special meeting of shareholders July 14 to vote again the increase of capital, owing to legal technicality jeopardizing first vote.

Shell-Royal Dutch, according to "rumor," is dickering with the United Oil Co., N. A. Cons., and Imperial Oil Co., to take them over; neither confirmed nor disavowed.

THE STOCK MARKET

Recent stock reports show, on the whole, very low prices, both in the bid and asked columns. Amalgamated is still under \$80, though paying \$1.25 monthly and sometimes \$1.50. Associated has again dropped to below \$40, being around \$37.50-\$38.50. Union Oil is quoted only at \$71-\$71.25. Union Provident and United Petroleum are quoted at identical prices—\$70 bid, and \$75 asked. During the Mexican "war" talk, prices of many stocks listed in New York dropped materially and Standard Oil of California went down 60 points, all told, from the recent high mark of \$350., being quoted at \$290.—\$292. At last reports \$300 is bid, \$309 asked. The smaller companies show generally the present lack of buying interest although the present is undoubtedly an excellent time to buy the choicest kind of oil shares at remarkable bargain prices. It is a fact, however, that the public can't seem to wake up to this opportunity, for, out of 93 stocks listed on the San Francisco Exchange, there were on May 6 but 14 stocks quoted! A list of San Francisco quotations, compiled from the daily lists issued between May 1 and 8 follows:

Amalgamated Oil	\$ 78 00	
Associated Oil Stock	38 00	38 25
Brookshire		30
Claremont	23	
Coalinga Central	15	20
Illinois Crude	07	09
Maricopa 36		15
Monte Cristo	95	1 05
Nevada County	15	
New Penn. Petroleum	15	
No. Am. Oil Con.	59	70
Pacific Crude Oil		15
Paraffine	10	
Palmer Union		04
Republic	10	
S. W. & B.	10	11
Turner	2 40	
W. K. Oil Co.	35	

Los Angeles Quotations

As usual there is a livelier interest in oil stocks in our southern metropolis—the World's Oil Metropolis—than here. The following list of quotations shows prices ruling just before our going to press:

Amalgamated Oil	77 00	78 00
Associated Oil	37 75	38 25
Brookshire Oil		35
Calif. Midway Oil Co.	03	05
Caribou/Caribou Oil Mining Co. ...		1 40
Central		55
Columbia	78	
Continental Oil	05	08
Euelid Oil Co.		15
Fullerton Oil		4 00
Globe	02	
Jade Oil Co.	03	
Maricopa Northern	08½	09
Maricopa Queen Oil Co.		15
Mascot Oil Co.	46	80
Mexican Pet. Ltd., Pfd		85 00
Mexican Pet. Ltd. com.....		65 00
Midway Northern	15½	19
National Pacific Oil Co.	03¾	04

New Penn. Pet. Co.		35
Olinda Land Co. (Oil)	25	35
Rice Ranch Oil Co	98	1 00
Trader's Oil Co.		28 00
Union	71 00	71 25
Union Provident Co.	70 00	75 00
United Petroleum	70 00	75 00
United Oil Co.	22	23
West Coast Pfd.	102 00	108 00
Western Union	90 00	101 00

Dividend Notices—Amalgamated will make its regular monthly payment of \$1.25 per share on May 25. West Coast pays \$1.50 per share May 16. Rice Ranch pays next regular 1 per cent dividend on June 1. Books close May 25. Standard Oil pays \$2.50 per share on June 15. Pacific Crude Oil has declared a 1 cent dividend.

SANTA MARIA

By Our Special Santa Maria Correspondent

The Pinal Dome Refining Company is getting ready for a big expansion in trade. Details are not yet ready for the press, but we understand a campaign has been mapped out that will carry Pinal-Dome gasoline to a number of distributing centers where it is not now obtainable. The Pinal-Dome "gas" is a very superior grade product, as the growth in the Company's business testifies. We expect to have something much more definite in the next issue.

The New Pennsylvania Petroleum Company is in very good shape and getting steadily better. The regular monthly income is in excess of expense. Indebtedness was expected to be cleaned up before the date of the issuance of this number of the "Derrick". Upon the clearance of indebtedness dividends will not immediately be resumed, but a surplus will first be accumulated in accordance with good business principles, dividends following at the discretion of the directors. The Company is working on No. 7 and deepening No. 5, from which a materially increased production is expected when the well has been finished in the lower sand. Any increase in production, of course, means an increase in revenue and hastens dividends. All around, the Company is in very good shape.

Palmer Union Oil Company is active as usual. Well No. 4 is now being re-drilled to carry it 220 feet further into the oil sand. The well is now 2732 feet deep, being just in the top of the oil sand. The other wells are holding up their output. Placing No. 4 off the list for the time being will reduce the output quite a little. We understand the Palmer has levied an assessment, to be used for improvements. We will have the data on this for our next issue.

General Developments in the field are pretty much as usual; nothing startling of recent date.



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San Francisco, Cal., May, 1914

(Issued June 13,)

No. 10

Non-Enforcement of the Common Carrier Law Relating to Oil Pipe Line Systems in California

By Jas. F. Farraher, Attorney for the Oil Producers and Consumers' League.

The oil fields of California are now yielding—using the reports for the month of April just past as the basis of calculation—over 280,000 barrels per day, 8,400,000 barrels per month, or over one hundred million barrels per year. This means a net new wealth contributed of over ten million dollars per year. Approximately thirty-five per cent of this product and prize goes to the Southern Pacific Company and its subsidiary concerns and approximately the same percentage to the Standard Oil Company.

Nature's storehouse, from which this extraction comes, embraces approximately 850 square miles, (M. L. Requa's estimate) an area less than that of the County of Alameda. The supply is **EXHAUSTIBLE**. The best-considered estimates limit the life of service at present extraction rate to the remainder of the century. Increasing this extraction, therefore, means exhaustion within lives in being, or even within the next several decades, if unlimited exploitation were to take place.

The oil fields are found south of Mount Diablo base line. The most important today are those commonly known as the Central California oil fields, embracing the Kern River, Midway, Sunset, McKittrick, Lost Hills, Belridge and Coalinga districts. The city of Los Angeles lies within our most southerly oil district. Her phenomenal growth in recent years is in a large degree attributable to this supply of economical and efficient fuel at and within her very doors. San Francisco is approximately two hundred miles from the Central California oil fields, but it is down-hill all the way to San Francisco Bay and oil is liquid, and pipe lines cost less than \$10,000 per mile to construct. Two pipe-line systems necessary to convey this oil to San Francisco Bay are at present in operation, and a third system is about to be constructed. Of the two systems already operating, the Standard Oil Company owns one, the Southern Pacific Company owns or controls the other.

The country is wise that provides for the future and brings into controlled service today that which, if properly conserved, will render more or less permanent service. Properly conserved, our oil fields will render service for many generations practically the same as the mountain

streams, harnessed and serving power and light to the city and country today, can be made to render permanent service. Oil is not only the most economical and efficient fuel and power agency available, but in its various forms it enters more fully into the uses and needs of the people than any commodity other than food stuffs. The names under which these service forms are known, indicate this universal use, to-wit: Gasoline, Kerosene, Lubricating Oil, Road Oils, Asphaltum, Paraffin, Axle Grease, Furniture Polish, etc.

As fuel for engines, heating plants, etc., the heavier grades of oil are largely used in the form they come from the well. The lighter gravity oils are eagerly purchased for refining by the big refining companies, of which, of course, Standard is by far the largest. The residuum left after the gasoline, kerosene, etc. are taken, is also available as a fuel oil, in fact, is gradually supplanting crude untreated oil as fuel, and the final residuum gives paraffin or asphaltum according to base.

Every wheeled vehicle, from the baby carriage to the lumber truck, and every piece of machinery that propels or is propelled, is served by oil products. The hundred thousand or more automobiles in use in California will consume upon an average three gallons of gasoline per day each, and approximately one-half gallon of lubricating oil. Practically every locomotive operating in this State or crossing the continent, uses oil as fuel, and the coal bunkers of our ocean craft, including our dreadnaughts, are rapidly being transformed into oil tanks.

The oil bodies are sometimes very liberal in their yielding. A single gusher in the Central California oil fields is today flowing from 35,000 to 40,000 barrels per day. Another well in the same locality, but flowing normally, is producing 8000 barrels per day, still another 2500 barrels daily, and so on down. The majority of wells, however, require pumping. The oil sands are mostly found at depths varying from 500 to 4000 feet. The boring of wells is expensive and the facilities for storing and handling of oil requires very large capital to install. These facts with the general need noted, and the control of the economical transportation thereof, make monopoly

easy. The history of the Standard Oil Company demonstrates not only the enormous profits obtainable, but this monopoly opportunity embraced.

That oil is a public utility in a literal sense at least, will not be denied. The problem of (1) the conservation of this oil supply with which nature has so bounteously favored us, and (2) its subjugation to common service upon reasonable returns to those who handle its distribution, or the exaction of such common service through state or government ownership, is the problem of today, and no State is so vitally interested in the solution of this problem as California.

As previously stated, the supply of oil is an exhaustible one. The fact that it is so easily taken and invitingly located, attracts those who would loot the future to become wealth gorged at the present.

San Francisco has one of the finest harbors in the world, and her Golden Gate now opens not only into the Pacific but into the Atlantic as well. As a manufacturing and distributing center, with fuel favors secure, no other city in the world can approach her in advantages. Her dependency in this regard to oil, however, is not open to question. Here oil is king. San Francisco's past experiences with transportation and other public utility monopolies have not been happy, but it is to be hoped they have been educational. The handicap imposed by the Southern Pacific Railroad is familiar history. The question at issue this very day and hour is, how long is this handicap to be maintained through an injunction restraining the State Railroad Commission from fixing the rates and assuming the control of the pipe line systems of this State as they are required to do by the last legislature? And this question of court procedure technicalities holding up the laws is the big question of the day.

The Waste That Impoverishes

Brief attention is invited, firstly, to the conservation phase, the larger phase, the phase that involves not only the duty to the present, but the duty to the future. The profligacy of both State and Nation with our munificent natural resources astounds and humiliates every thinking patriotic citizen today. There has been some splendid pioneering work done towards arresting this profligacy, but we are still largely in the public policy stage towards it. The oil situation gives realistic illustration. That school of local statesmen headed by Hon. Frank H. Short of Fresno, would say to leave the oil industry, the timber industry and the water power opportunities to the private capitalists—the oil to the Standard Oil Company and the Southern Pacific Company, for instance. Then he would have us elect a stand-pat Republican legislature and Governor and hold off Uncle Sam, to complete the spoliation of California's resources and citizens and to make a few new millionaires.

A recent international business transaction, however, a case decided by the Supreme Court of the State of California, and a State law making oil pipe lines common carriers, with attempt to enforce it through the Railroad Commission, held up by Federal injunction, and a few other cases in the Federal Courts brought to delareenize from the Southern Pacific Company the oil lands it is attempting to hold under a non-mineral patent, combine to emphasize the necessity of attention by the individual citizen and gives absolute support to the superior wisdom as well as to the gift of prophecy of the opposing school of statesmen, among whom Gifford Pinchot is a pioneer leader and President Wilson an enthusiast.

The international business transaction mentioned involved the purchase by a foreign syndicate of the Union Oil Company, a concern that is handling and controlling

approximately twenty-two and a half per cent of the total oil produced in the State of California. The gentlemen representing the syndicate are: Earl Grey, formerly Governor General of Canada; Sir Thomas Boyden, chairman of the Cunard Steamship Company's Board; Sir Edward Ward, head of a large English Steamship Company; Andrew Weir, president of the Weir Steamship Company; William Anderson, representing a Holland Shipbuilding concern; Lord Pierrie, of the White Star Steamship Line, and Sir. Wm. Owen, of the Suez Canal Co., etc.

The new concern will undoubtedly convey oil from the California oil fields to its foreign built and foreign owned ships, for transportation to foreign ports for foreign consumption and service. Absentee proprietors will receive the dividends and foreign lands will receive the service.

Immediately following the consummation of this deal comes the effort to amalgamate and vest ownership power over all of the properties of the Independent Oil Producers Agency in a holding concern to be represented by an executive committee of five. The avowed purpose is to place the amalgamated concerns in a position to meet their competitors. A few years ago a movement with a similar declaration of purpose was inaugurated under the name of the Associated Oil Company. Today the Southern Pacific owns the Associated Oil Company. History will repeat itself and these now independent oil producing holdings will pass to the best bidding syndicate, if the pending plan succeeds. State exploitation seems a fitting termination to the whole scheme, which is now ripe for such a move. To prevent the pending exploitation the government of the United States has made withdrawals covering a substantial portion of the oil fields, and it is now prosecuting suits against the Southern Pacific Company, as previously stated, to delareenize from it and add to this reserved area oil lands that the Southern Pacific Company is claiming under non-mineral patents. Directly in line with the same policy is the oil land leasing legislation now before congress. Special interests are there represented, of course. The exact field where this measure will be first applied is in the State of California. California, therefore, is more interested in having this legislation right, than any other state in the Union, and the City of San Francisco emphatically more than any other city. Intelligent attention at this time will be of much assistance. Sleeping on our rights is likely to mean awakening to despoliation. We should bear in mind that every barrel of oil shipped to a foreign port means a higher price to Americans for what is left.

The government is opening up the coal lands in Alaska. That means cheaper fuel for rival cities. The Standard Oil Company with the money it has made and is making out of oil here, is opening up the oil fields of other lands. This means cheaper fuel for other nations. With the oil of California wedded in service to the industries of California, the economic advantage as to fuel is decidedly with us. With a substantial part of our oil diverted to foreign lands, however, this economic advantage may easily shift. Our duty seems clear.

It will be conceded that where the independent producers in the field are enabled to sell their raw product to the refiner at bay points, that such producers will be in a better position to operate on a fair basis of profit than where this privilege is denied. It will be further conceded that if the independent refiners at the distributing center can buy from the producer in the field the raw product, such independent refiner will be in a position to do business on assured lines. The denial of these privileges either to the producer in the field or the refiner at the distributing center, however, means ultimately their removal from the field of competition. The history of

the Standard Oil is a series of obituaries of those who have attempted either as independent producers or as independent refiners to compete with that mammoth concern. The agency with which the Standard Oil Company in the past accomplished the elimination of these independent producers and refiners was the pipe line. As previously noted, there are two pipe line systems connecting the oil fields of Central California and San Francisco Bay; one owned by the Standard Oil Company and the other by the Southern Pacific Company. These oil pipe lines have been operated exclusively as private carriers. There are two methods of transporting oil from these oil fields; one by pipe line and one by tank cars. The Southern Pacific runs tank cars between the oil fields and San Francisco Bay. The freight rate per barrel on oil is approximately forty-two cents. The Southern Pacific Company furnished the money for the construction of an oil pipe line, paralleling its railroad and on its right of way. This pipe line is operated and managed under the name of the Associated Pipe Line Company. The Associated Pipe Line Company resulted from an arrangement between the Kern Trading and Oil Company and the Associated Oil Company. This tracing of pedigree is important. The Associated Oil Company, now owned or controlled by the Southern Pacific Company, is in the oil field buying oil and is engaged to a large extent in refining oil. These affiliated concerns today control and are handling approximately thirty-five per cent of the total output of the oil of the State. The oil they receive or produce in the field, they can ship to refining or consumption points through their pipe line at a cost not exceeding eight cents per barrel. The independent producer, to ship his oil over the same route must ship it in tank cars and pay a freight rate to the same concern operating as a railroad company, of approximately forty-two cents per barrel. The independent refiner, at tide points, undertaking to get oil from the independent producer, is subjected to the same transportation imposition.

How The System Works

As already stated, the railroad or tank car rate is approximately forty-two cents per barrel. The cost of transportation by pipe line let us say, is ten cents per barrel. This is a very generous figure—two cents margin on every barrel. Assuming purchasing conditions in the field to be equal, the independent refiner on the bay must pay at least thirty-two cents more per barrel for his crude oil than his competing refiners, the Standard Oil Company and the Associated Oil Company. Further than this, the Standard Oil Company and the Associated Oil Company can afford to run their refineries at actual loss if necessary, because of the favoring margin in the assumed freight factor. (They don't however.) Again, through the magnitude of their facilities and their destroying power over competitors, the larger companies impress trade and control markets. This fictitious freight factor is used in fixing the price to general consumers. For instance: The market price of crude oil in the oil fields as officially stated in the Standard Oil Bulletin for May, is forty cents for what is commonly called fuel oil (14 degrees to 20.9 degrees gravity). Allowing ten cents for pipe line transportation, ten cents for distribution charge, and say fifteen cents as legitimate profit, and we have as a reasonable market price seventy-five cents per barrel on fuel oil alone. The selling price at San Francisco bay points, however, as fixed by the Standard Oil Company, is 85 to 90 cents per barrel. The fictitious freight factor in it therefore stands

for from 10 to 15 cents per barrel. But the Standard's fuel trade is in a residual oil, from which a profit is taken before the product reaches the burner.

The Remedy

The last legislature by statute declared all oil pipe lines common carriers. This law went into effect on August 12, 1913. The Railroad Commission immediately cited the various pipe line companies to show cause why the law should not become operative as to them. The Standard Oil filed a protest and assent to the laws and presented its schedule of rates. The Southern Pacific Company, operating as the Associated Pipe Line Company, refused to comply and brought action in the Federal Court to enjoin the Commission from enforcement. A preliminary injunction has been issued. This injunction serves the Standard as well as the Southern Pacific. Pending the law's delay, invoked for the very purpose, the same old scheme of competitor destruction and resource absorption goes on, true to the letter, to eastern history and to dear old "precedent."

The Standard Oil Company, which fixes the market price for oil both in the field and points of consumption, has just reduced the price of oil in the field five cents per barrel. The price paid in the field is, it is generally conceded, already too low to admit of reasonable profit to the producers. It will be observed that the pipe line companies are the only purchasers in the field. The Standard Oil Company explains that the necessity for the reduction arises from the over production of oil, and that by reducing the price they hope to effect the curtailment of this production. The Producers Agency, which includes practically all of the independent producers and which has been marketing their oil through the agency of the Union Oil Company, has cut down the amount of oil which they permit to go to sale, placing the excess in storage. This action brings the current cost of production above the realization so that as a matter of fact only about 26 cents per barrel is realized by the Agency. In other words, the oil well operators are compelled to operate at a present loss, or at least on the verge of loss. On the heels of this condition, comes the proposition to have all of the independent producers deed their properties to a holding company. At the same time the Standard Oil Company has reduced the price of gasoline in the market. This hits the independent refiners, which as previously shown, are at a material disadvantage in so far as competing with the larger companies is concerned, owing to the pipe line cinch. The price of crude oil at points of consumption, however, has not been reduced. The reductions made, therefore, hit the independent producer in the field, and the independent refiner at the point of distribution.

The fold is now open for both the independent producers and independent refiners. The law's delays or public apathy will drive them to surrender unless an expressed public policy or public attitude effects a rescue.

Church Oil Land Bill, or other leasing bills: The Derrick has absolutely nothing to present at this time. There appears to be half a dozen measures designed to correct and corral, some passed by Senate, some by House, but the Lord knows which are which; we don't—yet.

Appalachian Oil Production in 1913 is reported as about 26,000,000 barrels, valued at \$63,000,000, a decrease of about 1 3/4 per cent in volume and an increase of about 50 per cent in value. Average price per barrel at the well was \$2.46.

Arnold and Garfias on the Geology and Structure of the McKittrick, Midway and Sunset Oilfields

Foreword

In view of the development in the "West Side" fields of so many wells of enormous output, especially within the past several months, the Geology and Structure of these fields has become of general interest and it must be conceded that any district which adds so suddenly and heavily to the light-gravity output of the State as the Sunset field, is worthy of serious study and attention, from no matter what angle. Messrs. Arnold and Garfias' standing being so generally known, their brief discussion of the subject, in "Geology and Technology of the California Oilfields" needs no comments on our part, and will be of double interest just at this time.

Geology

The formations involved in the geology of the McKittrick, Midway and Sunset districts include, in the order of their age beginning with the oldest, coarse, semi-concretionary sandstone 400 feet or more in thickness, believed to be of Vacueros or lower Miocene age; 3000 to 5000 feet of siliceous and clayey shale containing numerous calcareous layers and concretions of Monterey or lower Miocene age; softer, lighter-colored diatomaceous shale locally silicified to chalcodony, in which are intercalated prominent lenses of coarse granitic sand and conglomerate (the latter containing some boulders up to 6 feet in diameter) 1000 to 1500 feet thick and believed to be of Santa Margarita or upper Miocene age; a series of 1200 to 2000 feet of soft sands, clays and conglomerates, probably divisible into more than one stratigraphic horizon called the McKittrick formation and of upper Miocene and possibly Pliocene age; and, finally, stream deposits, valley fillings and alluvium, of Quarternary age. The Monterey and Santa Margarita formations apparently lie in a conformable series, while the McKittrick (upper Miocene) overlies these unconformably, contains intraformational unconformities, and is, in turn, unconformably overlain by the Quarternary deposits.

The oil is believed to have originated in the diatomaceous shales of the Monterey and Santa Margarita formations, and to have migrated to the porous layers inter-

calated with them, or to the sands and gravels of the unconformably overlying McKittrick formations. With a few exceptions, the productive sands in all of the operating wells are included in the base of the McKittrick formation or in sands overlying the intraformational unconformity. The deeper sands in some of the wells in the northern part of the Midway district may occur in the Santa Margarita. It is also possible that commercial quantities of oil are contained in sands near the base of the Monterey or in certain structurally favorable localities, particularly in the Sunset district. The geological and structural conditions affecting the accumulation of oil in the Belridge field are somewhat similar to those in the Lost Hills district.

Structure

These districts lie on the northeast flank of the great geanticline which dominates the Temblor Range. The beds on this flank do not form a simple slope into the San Joaquin valley, but are affected by a series of more or less well-defined folds or anticlines, which in a general way are reflected by hills and ridges on the surface. Such anticlines as the Twenty-five hill and those in the Buena Vista and Elk hills are characteristic of the folds in this region. In general, the dips of the beds on the flank of these folds are relatively low (5 deg. to 12 deg.) as compared with those developed in the heart of the Temblor Range, which averages over 45 deg. The largest producers are found on or near the axes of anticlines and subsidiary folds. More water troubles and usually smaller productions are encountered in the wells in synclines.

Broadly speaking the productive McKittrick district lies on the flanks of three more or less local and highly complex folds subsidiary to the great northeast-dipping monocline. Thrust faulting and overturning have so complicated the folding as to often place the older beds above the younger.

The Midway district is developed on the monocline and on subsidiary folds. The district is divided locally into a number of areas named for topographical or structural features. The most important of these areas are the Buena Vista hills, Midway Flat (valley), Twenty-five hill, Elk Hills, etc.

The Sunset district is located on the main monocline and on the Twenty-five and California Fortune anticlines and subsidiary flexures.

Technical Papers of the U. S. Bureau of Mines, recently issued, are of surpassing interest and great practical value to the operator. The Derrick would like to review a number of these papers in a thorough manner, but lack of space forbids so that we will merely mention the papers we have reference to. They are: Technical paper, 74, Petroleum Technology; 18, "Physical and Chemical Properties of the Petroleum of California"; Technical Paper 68, Petroleum Technology 15, "Drilling Wells in Oklahoma by the Mud-Laden Fluid Method"; Technical Paper 57, Petroleum Technology 13, "The Utilization of Petroleum and

Natural Gas in Wyoming"; including a discussion of "The Suitability of Natural Gas for making gasoline"; Technical Paper 66, Pet. Tech. 14, "Mud-Laden Fluid Applied to Well-Drilling"; Bulletin 42, "The Sampling and Examination of Mine Gases and Natural Gas," and, lastly, "Problems of the Petroleum Industry," which is Technical Paper 72 and has as its subject a very patriotic and practical matter—elimination or reduction of waste in petroleum production. All these papers may be procured from the U. S. Bureau of Mines, Washington, D. C., upon application. They need no recommendation, coming from such a source.

First Withdrawal Again Held Invalid

The decision of Judge M. T. Dooling of the U. S. District Court of San Francisco in the case of the United States versus Midway Northern Oil Company and the other defendant companies operating on the northwest quarter of section 32, 12-23, Maricopa (Sunset field), wherein the Government sought title to the property, because it had been withdrawn from any form of entry on September 27, 1909, and that later than March 10, 1910, the defendant occupied the property, was made public on June 1, the judge holding the first withdrawal order of the President invalid. It was expected that this would be the outcome. President Taft himself expressed "grave doubt" as to his constitutional power to make the withdrawal, and a similar case in Wyoming, where the circumstances were parallel, was decided in the same way, so that the operators had every reason to expect their case would be won. What a great burden has been removed from their chests, what a tremendous victory it is for them, may well be judged. The difficulties under which these operators have labored since the first withdrawal order cannot be exaggerated. But the victory is won, unless the Supreme Court shall decide otherwise in the case already appealed from Wyoming, and those who undertook to defy unprecedented executive interference with the land laws of the United States, are safe.

While the suit affects directly the properties of the defendants on that one-quarter section of ground, the ruling nullifies the entire withdrawal of 3,041,000 acres of land in California and Wyoming, of which 2,871,000 acres lies in this State and the balance in Wyoming. It is presumed then, that all honest claimants who started their operation prior to the second withdrawal are "within the law." In refusing to grant the Government's application for an order restraining the defendant from further use of the land, and to appoint a receiver for the companies operating thereon, the Court went into detail to show that the Chief Executive had clearly exceeded his power. The following excerpts from the decision outline the case:

"Many times the Executive has withdrawn lands in the past and Congress has either disapproved or indicated approval of such withdrawals. The right to make such withdrawals has also frequently been passed upon by the courts in concrete and specific cases. In many instances such right has been upheld, in others it has not. In every instance where the right was affirmed in the absence of Congressional authority, either directly or indirectly to be implied, it was authorized because the land was actually devoted to specific public purposes before the right of any third party has intervened, or because such withdrawal was necessary in order to affect the purpose of some existing law.

"It is clear that no general power of withdrawal exists, and while withdrawal orders have been frequently upheld, I can find no case broad enough to cover the withdrawal of 3,000,000 acres from the operation of mineral land laws, whether 'in aid of proposed legislation,' as is stated in the order, or for the purpose of securing fuel oil for the navy, as is stated in the bill. **The effect of the order of September 27, 1909, whatever its purpose, was practically to suspend the operation of mineral laws, as applied to petroleum deposits in the public domain.** If such a power exists, plaintiff should be able to point to clear legislative or constitutional provisions, upon which

it rests. I am not content to seek for it in the dicta of decisions or in some shadowy twilight zone lying between powers expressly granted to Congress and powers expressly granted to the President.

"The power to dispose of public lands has been given to Congress by the Constitution and I find no conflicting power granted to the President by that instrument derogatory to the power given Congress in this regard. The Congress' will as to these lands is clearly expressed in the laws above cited and the right to nullify this will is not lodged in either the executive or judicial department. On the contrary it is equally the duty of the executive as of the judicial department to see that this will is carried into effect.

"The promulgation of the order in question I believe to be but one manifestation of a growing tendency to concentrate in the Executive more of power than can be traced to any specific constitutional or legislative provision. As this tendency in the present instance leads to the encroachment upon the public domain of the Congress, I am unwilling to further it by any decree of this court and for this reason it is ordered that the application for a receiver and an injunction be denied and the bill itself dismissed."

Exports of Petroleum Products from California in April 1914

The following table gives all California exports in detail:

Articles	Gallons	Dollars
No Crude shipped.		
ILLUMINATING:		
San Francisco	11,323,868	516,601
Southern California	2,003	367
LUBRICATING and PARAFFIN:		
San Francisco	261,101	35,788
Southern California	510	156
NAPHTHAS, GASOLINE, Etc., Etc.:		
San Francisco	230,827	42,258
Southern California	21,899	2,991
RESIDUUM, GAS OIL and FUEL OILS, Etc.:		
San Francisco	36,522,758	710,283
Southern California	59,925	1,132
Total San Francisco	48,338,554	1,304,930
Total Southern California	84,337	4,646
Grand total	48,422,891	\$1,309,576

The Derrick will give a thorough resume of California's annual export trade when the figures for the fiscal year come to hand.

Standard Oil's Old and New Prices at the Well

Following are Standard Oil's old and new prices for refining oils—above 20.9 gravity, as announced May 20:

Gravity	Old Price	New Price
21-23.9	\$0.50	\$0.45
24-26.9	0.55	0.50
27-28.9	0.60	0.55
29-30.9	0.70	0.65
31-32.9	0.75	0.70

California Derrick

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

The Great Production of Refining Oil and The Usual Result

On May 20th, Standard cut its prices to producers of refining oil of 21 gravity and over, five cents per barrel. It was a hard, harsh fall, but rock-bottom is supposed to have been hit. Every oil man knows there is plenty of light gravity oil on hand now, however little such a cut would have been predicted a year or eighteen months back. The idea has always been that the 21 gravity and better, couldn't drop; that there never would be enough. Perhaps the refiners felt the only way to secure a supply sufficient for their needs was to maintain prices until there was an ample amount in evidence.

California's sufficiency in the matter of refining supply has been amply demonstrated now, on the prices that have prevailed, and this, in the main, by small organizations. Of course these demonstrators now receive less, with the new "light" territory pouring forth their various seas of different grades of refining oils, but like true oil producers, they undoubtedly console themselves by the reflection that they are public benefactors, that gasoline is cheaper now and will probably get down to ten cents per gallon, and that large sales and small profits will eventually eliminate the surplus, create a greater market and save them the trouble of conserving the supply in expensive storage tanks. A few more Lakeviews are all that is necessary to shut down several hundred more wells, not to say leases, and lay off several hundred men in addition to those already laid off in the Midway-Sunset. Gusher production has been a great burden to the average-output operators, and in many instances to the owners them-

selves. Dr. E. A. Starke said only a few days ago that anyone who will take time to figure 40,000 barrels a day at fifty cents per barrel will realize immediately what an enormous amount of capital is required to purchase the product of one 40,000 barrel gusher alone. One of these wells is enough to bankrupt its owners. The Derrick has a panacea for this ill: Let the man that gets the uncontrolled gusher which puts other wells out of the running, receive for his oil only half what the other fellow gets; then, maybe, the operators will be more careful about bringing their wells in **under control**, and will save the Oil Industry generally from what it has suffered this past three years. This is merely a suggestion. One of our Los Angeles acquaintances suggested that anyone bringing in a gusher should have the well capped with his own head, but this we believe really too severe and suggest the more charitable plan already outlined. The new crude prices will be found elsewhere in these pages.

* * * *

As conclusive proof that this IS the PETROLEUM ERA we submit the fact that the FIRST installation of exhibits at the Exposition was a Diesel Engine, the installation beginning May 27 with appropriate ceremony. It is officially stated that the work of installation will cost \$700,000. Such being the case, we have no doubt the value of the exhibit itself will be tremendous.

* * * *

They NEVER will be missed.—The driller who gets drunk and drops the tools in the hole; or freezes the casings—The phool who lights his cigarette in the derrick.—The I. W. W. oilfield agitators—The Get-rich-quick-Wallingfords.—The detractors of President Wilson.—The lick-spittles of bad business.—The wreckers, agitators and despoilers of good big business.—Victoriano Huerta—and others! Once again and all around. — **THEY NEVER WILL BE MISSED!**

* * * *

That one gasoline well in Canada is making more commotion than does the discovery of big oilfields in the United States: Just another illustration of the anxiety of the entire British Nation for a British Oil Supply.

* * * *

In England gasoline ("motor spirit") sells for 42 cents per gallon, being a luxury that only high-toned cars can really afford: California now has 14 cent gasoline and it looks as though our motorists will get it for ten cents before long if the new processes, new production, new companies and attendant cuts and counter cuts do not reach an absolute zero-profit level. Well, England will be eight thousand or so miles nearer the Pacific Coast—mighty soon.

* * * *

From further bleak and gloomy weather; from fog and rain, or both together, Good Lord, deliver us. Another way of expressing gratitude at the return of the sun!

* * * *

"And Don't you Forget it!"—The Derrick publishes a class and range of material that can be obtained in no other oil publication! (\$2.00 a year: take your pen in hand.)

* * * *

Business is good—in San Francisco!

A conservative Estimate of California's Oil Output in May will, we believe, place the same at from 315,000 to 325,000 barrels per day—or from 9765,000 to 10,075,000 barrels per month, which is at the rate of approximately 120,000,000 barrels per year! Truly, our gushers are working overtime!

* * * * *

Dr. Jos. A. Holmes, Director of the U. S. Bureau of Mines, on May 20 delivered an address before the Natural Gas Association of America, in convention at St. Louis. The address was very interesting indeed, outlining the work of the Bureau of Mines in its attempts to conserve life and natural resources, and at the same time to build up industry. The Derrick expects to publish portions of Dr. Holmes' address in the next issue, as a transcription has been forwarded us.

* * * * *

The J. F. Lucey Company announces the acceptance by Mr. Chas. E. Miller of the position of Treasurer of the Company. Mr. Miller having resigned from his position with the Mechanics and Metals National Bank, New York, to go to his new office at 50 Church street, N. Y. As the Lucey Company invariably has good men, comment is unnecessary.

* * * * *

Western Canada has gone wild over the strike in the Dingman well in the Alberta "oil fields," of oil so high in gravity as to be superior to gasoline and the greatest rush in the history of Canada is on to Calgary. Wonderful tales come of men making fortunes overnight on the transfer of their barren holdings, speculation being absolutely wild. Companies are being floated and the stocks sold with amazing speed. One company sold 50,000 shares of stock in forty minutes. The Alberta papers are filled with stock company ads and development of the fields is but a matter of putting down the wells, because the money is there. Dozens of California operators are on the scene; so are operators from all over the rest of the U. S. One hundred outfits are reported to have been ordered from this country for immediate shipment to the scene of the strike and new railroads into the district are promised. We will try to give a thorough canvas of the situation in our next issue.

* * * * *

Jas. F. Farraher's Article on non-enforcement of the Common Carrier Pipe Line Laws, appearing in this issue, is a challenge to debate. Will it be accepted? Will anyone undertake to disprove Mr. Farraher's statements? It is an interesting question and the pages of the Derrick are open for the answer.

Production, Consumption and Field Operations During April

(Standard Oil Figures)

Production fell off to 284,701 barrels, from the March figure of 286,591 barrels daily. The total April production of California was, therefore, 8,541,030 barrels. With a shut in production estimated at 14,000 barrels per day additional. There were 33 completions during the month, and many big producers among them, including two of the North American Cons. Co., one of the General Petroleum, one of the Midland Oilfields, and one of the Miocene Oil Co., all in the Midway-Sunset, while a 1,000 barrel well was got by the St. Helen's Petroleum Co., in the Whittier-

Fullerton field. These were the "phenoms" of April. The May surprise and gusher of the year is the Lakeview No. 2 Oil Company's No. 1 well, which has made as much as 80,000 barrels in 24 hours, outdoing the famous original of the same name.

Shipments, or consumption, in April exceeded the output by 222,000 barrels, totalling 8,763,238 barrels. There was a slight decrease from March in shipments but nevertheless total storage April 30, had decreased more than 200,000 barrels since March 31, totalling 49,625,570 barrels. The May storage will likely be 50,500,000 barrels on account of the excess gusher oil.

Following is the detailed statement:

Total crude oil stocks, April 30, 1914, 49,625,570 barrels.
Total shipments from fields, April, 1914, 8,763,238 barrels

FIELD	New Rigs	Completed During Month	Abandoned During Month	Producing	Production Per Day
Kern River	6	1	1	1,421	19,875
McKittrick	2	2	2	221	9,200
Midway and Sunset	28	92	15	1,330	137,969
Lost Hills and Belridge	7	16	5	222	13,563
Coalinga	2	29	2	856	43,612
Lompoc and Santa Maria	1	11	1	225	12,900
Ventura County and Newhall ..	4	28	4	405	2,882
Los Angeles and Salt Lake ...	1	6	1	681	6,925
Whittier-Fullerton	5	84	4	528	37,543
Summerland .....	..	..	..	108	156
Watsonville .....	..	..	..	5	75
Total	50	274	33	5,602	284,701

The "California Highway Bulletin" will be published quarterly beginning July 1, giving a summary of the work done to date in laying out and building the State Highway. The publication will be distributed free of charge from the office in the Rialto Building, this city.

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TODAY'S FORECAST OF THE EXPOSITION HERE IN 1915

Two Views Give an Idea of the Architecture of the Exposition, and Show the Main Portion of the Exposition Site. Both Photos by C. C. Wright



This Photo Is the Best View of the Exposition As a Whole That We Have Yet Seen Published.

More than three hundred conventions are already "booked" for San Francisco next year. On the convention attendance alone, the Exposition should be a grand success. So many wonderful educational features have never been gathered together before—hundreds of them undreamed of when the last big exposition was held in St. Louis. The buildings on the Exposition grounds are rapidly nearing completion—many are entirely completed. Enough cannot be said for their beauty, which is in no small measure attributable to the beautiful color scheme,

richly oriental, and the artistic use of trees and shrubbery against the tall, architecturally unbroken walls. With the Golden Gate in front of the buildings and the hills of San Francisco encircling them, every natural advantage is secured, the site being unrivalled. The best time to visit the Exposition will undoubtedly be during July, August, September, October and November, when there is little fog and the days are generally warmest and brightest. The photos were taken by the editor for use in the last number, but owing to lack of space we were forced to delay.



Photo Shows the "Palace of Education," an Enormous Structure. The View Was Taken From the Top of the Fine Arts Palace, 100 Feet Above Ground.

Returns From European Trip—Our friend D. Daniels, of the D. & B. Pump & Supply Co., has just returned from a European trip, taken primarily for the purpose of visiting the World's Oil Industries' Exhibition, in London, where D. & B. products were well represented. In the next issue we will tell a few of the sights Mr. Daniels took in, some of his conclusions and his ideas of matters in Great Britain.

Alaska Coal a New Competitor. Fifty tons of Alaska coal, from the Matanuska coal fields, will soon be delivered to the Puget Sound Navy Yard at Bremerton, to be tested for its efficiency by U. S. Cruisers. Marketers, wake up!

"Ben" White and Jack Barry, the former "Giant" baseball outfielder, operating on the property of the

Tennessee Land & Water Co., in Tennessee Canyon, exactly half way between Corona and Elsinore, Riverside County, are down 2250 to 2300 feet; going. The McGee Brothers of Santa Monica are drilling the well. Mr. White declares he had a productive oil sand at 1800 feet, but thought best to drill deep to get both a better sand and output. There have been a number of gas blowouts within the last two weeks, which is considered indicative of nearness of the deeper oil sand expected. To date the well has cost in excess of \$50,000.

Standard Oil has declared dividend No. 22, in the amount of \$2.50 per share, payable June 15. The increase in capital from fifty to one hundred million dollars has again been authorized. Now for the distributions.

Interesting Developments of Recent Date

American Gasoline Company has let contracts to the Healy-Tibbetts Construction Company, this city, for two enormous steel tanks, of a capacity said to be 1,000,000 barrels each, to be constructed at Martinez, where the Company's refinery will be located. The Valley Pipe Line Company, a subsidiary, has been organized to attend to the transportation of the Company's oil. One hundred and seventy miles of 8 and 10 inch pipe line has been ordered from the Youngstown Sheet and Tube Company, of Youngstown, O., for the Company's line from Coalinga to Martinez refinery. A contract has been given Sander-son & Porter, of the Nevada Bank Building, this city, for the construction work on the line, which will begin as soon as the pipe arrives.

Agency's Price, or returns to members on the oil sold during April, netted 38 cents per barrel, sales totalling 1,235,000 barrels. What the net per-barrel returns amount to in proportion to the production of each company, we do not know, but it is stated that 26 cents per barrel on entire production is about what the companies are averaging. We do not vouch for this figure, having no facts to prove or disprove.

The Spellacy Companies are reported as follows: Premier—While the Company has had much water trouble, the wells are in pretty good shape now, although there is at present very little incentive to do more than merely conserve the wells from water, returns being entirely too low. The Company has drilled 16 wells on the property, so that the drilling conditions of the lease are fully complied with; the lease extending as long as oil is produced in commercial quantities. The Company still has 100 acres of proven territory to drill, when the returns again justify drilling. Meantime the property is making between 9000 and 10,000 barrels monthly from 13 wells now producing. Of the three remaining wells 1 is a water well and the other two are being doctored up.

Mascot: Property is in first class condition, producing between 35,000 and 40,000 barrels per month from 34 wells now operating. Thus far 40 wells have been drilled. The Company's output is being sold to the Union Oil Company on daily runs, netting around 2½ cents per barrel. Dividends are being paid regularly at the rate of six-tenths of one per cent per month.

Cresceus Oil Co. is making about 4000 barrels monthly, the oil going to the Agency.

Mexican Premier Oil Co. Work is being held up on account of the unsettled conditions. The company owns 25,000 acres of very valuable lands, the acreage being in three tracts. The Company's well is temporarily shut down at 2600 feet.

English Government Backs Anglo-Persian Oil Co.

Concerning the above report, "Le Petrole", the technical French petroleum journal, says in its May issue:

Anglo-Persian Oil.—The English Government has just signed a contract guaranteeing £2,000,000 to this corpora-

tion. The company binds itself, in case of need, to reserve its entire oil production to the English Admiralty."

Burmah Oil Company, for which many California drillers are working, paid 27 1/2 per cent dividends in 1913, a gain of 7 1/2 per cent over the 1912 returns.

The German Petroleum Monopoly Bill has been "shelved" for an indefinite period; at the very earliest until the next meeting of the Reichstag.

A Directory of Minerals has been issued by the Government. It gives the locality of 400 different kinds of minerals, and the list of localities in each State where the different minerals are known to occur at present. This remarkable book, Bulletin No. 585, is 250 pages in length. It may be obtained free on application to the Director of the United States Geological Survey, Washington, D. C.

Seaboard Oil & Transit Company's probable course, we learn from private, reliable sources, will be on the following order: First, the properties known as the Templor, "Madison" and "Section Six" will be abandoned, as they offer slim possibilities of returns commensurate with investment and time taken to develop them, the directors believing the Company well rid of the indebtedness accompanying the properties, by abandoning the latter, while the properties having recognized merit and production, obviously, are those which should and will command the management's attention. It would be time wasted to fiddle with the wrecks. The management will therefore confine its future expenditures for development purposes to the "Gate City" property at Maricopa and the Sandoval properties in the Tampico Mexico, field. Concerning the latter holding, it appears unquestioned that a very high valuation may safely be placed upon it, but at the present time development directly by the Seaboard Company is not considered feasible. The development work to be done in California in the immediate future contemplates the repair of wells already drilled on the Gate City property so as to get the utmost production of the heavy oil (of which there is no over-production in the state at the present time) and the drilling of three new wells in accordance with the requirements of the new lease, which was made last year in consideration of a reduction of the royalty, and which stipulates that the new wells be drilled within thirty months of September 1st, 1913. One of the three new wells is required to be drilled to the deep sand. The result of carrying out the outlined program is expected to be a largely increased output, and the decision to prosecute this development came as a result of the appraisal made by Messrs. Hall, Craig and Crites, whose report will soon be made to the shareholders. Very marked economy came in the administration of the Seaboard Company with the election of the new Board. For one thing, the salary of the president was abolished, cutting out \$250 monthly expense on this one item. The overhead expense heretofore was entirely disproportionate to the earnings and holdings of the Company. By other drastic cuts the saving in administration over the previous management's expenses totals slightly more than \$400 monthly. Not only this, but other expenses will now disappear that would have been a drag on the Company, had the properties which it has been decided to abandon, been retained. The Company is thus seen to be attaining a level of close business operation, one which must commend itself to the shareholders. Concerning the Mexican properties a number of tracts, all well located, comprise the Company's Mexican holdings; development will probably be through sub-lessees; in fact the Company can already sub-let to at least one concern if it chooses to do so, and probably will if terms satisfactory to the management can be arranged. This course involves the expenditure of virtually nothing on the part of the Company, and conserves the funds of the Company, also protects the shareholders from further indebtedness. Should big wells be struck by the sub-lessees, the Company can develop its adjoining holdings. A very prudent program. The last assessment realized \$35,701.98; of this amount approximately \$25,000 has gone to liquidate indebtedness; a statement for shareholders will soon be forthcoming. If our information is as accurate as we believe, there will be one more assessment; but none thereafter. We have it that the assessment will be for 1 cent per share, and that this, on the present outstanding capital stock, will afford sufficient funds to carry to a successful conclusion the plans outlined. The management believes, our informant states, that with the above program carried out, the shares of stock of the Company now outstanding will represent a definite investment of very real value, and one relieved from the burden of all further charges for the maintenance of the Company or its properties. There are still a few claims not in the hands of the creditors' trustee, and until these are either signed up or eliminated by special agreement, the Board will not levy or enforce the collection of another assessment. Such shareholders as did not pay their last assessment may yet redeem their stock by complying with the provisions of the circular issued by the Board last December, providing they do so before July first, this year. The Derrick may say in conclusion that it regards the new management's record to date and the proposed plans as very fair indeed, and as best calculated to work for the shareholders' benefit. It shows a genuine, honest effort.

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In the April issue, A. P. McLaughlin writes a report on the Midway and Sunset Fields. A. T. Parsons tells of 'Graphic Studies of Oil Formation.' Other articles are 'The Diesel Engine,' 'Petroleum Production in Peru' and 'Oil Refinery in Persia.' This issue also contains descriptive articles on other engineering work being done on the coast.

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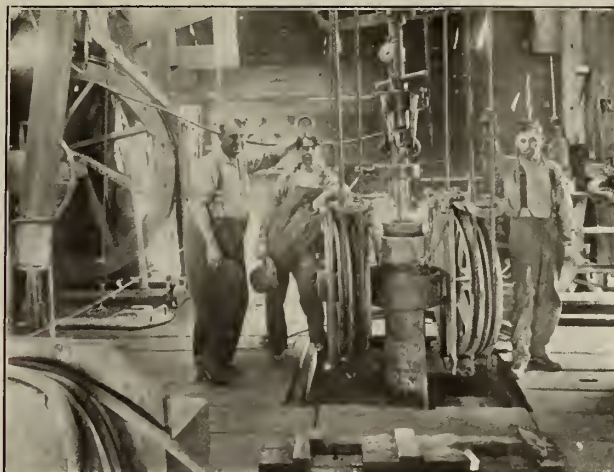
(CALIFORNIA)

COALINGA

Guy H. Salisbury's Special Report

TURNER OIL COMPANY'S GAS COMPRESSOR PLANT WHERE 3000 GALLONS OF GASOLINE CAN BE EXTRACTED EVERY TWENTY-FOUR HOURS

This is the first photo to be published of the new Turner plant, just completed. The machinery, though not visible in this photo, is up-to-the-minute just the same, and when it finishes squeezing the gas after numerous heatings, expandings, contracting and scrubbing, there isn't much moisture left in it. The compressors are capable of



treating 1,300,000 cubic feet of gas per twenty-four hours. The product realized is of two grades; both high; 63 gravity and 81 gravity. The gasoline will not be sold direct but will go to refining companies.

The "Coalinga Elevator-Spider" A New Tool

The latest new invention in oil well tools, to come from Coalinga, is the "Coalinga Elevator," a combination elevator-spider used in moving the casing in a well while drilling. The tool is the invention of Wm. Garrigan and Phil Daubenspeck of the Turner Oil Company. The patent papers were received from the patent office last week. The device works perfectly; it is intended for deep territory, where it is necessary to move the casing often.

The elevator-spider holds the casing the same as an ordinary spider and lifts the pipe the same as an elevator. The "Double" rings are used in place of slips in the spider that clinches the pipe and holds it in place. The appliance is about five feet square. On opposite sides on the under side of the appliance, are two 36-inch shives; two wire casing lines run through these shives on each side, making four lines on a side. These pass over the crown block, and back to the calf wheel. In moving the casing up and down the device is used as an elevator, with no unhitching of tools, as the casing is raised and lowered while tools are working. There are four of these tools on the Turner property now in use on drilling wells. A short time ago a party of Japanese oil men were

in the field investigating the California method of handling tools in drilling an oil well, as well as handling the production. They were shown this appliance in actual work on the well, and were so impressed with it that they ordered two made and shipped to Japan. California leads the world in the invention of useful oil well tools, and today the California made oil well tools are found in every oil field of any importance in the world, and no device used in the drilling of an oil well is more important to the operator than this elevator-spider.

CONDENSATIONS

C. A. Goodyear has secured control of the entire holdings of the Lubricating Oil Company on section 12, 21-14, and will undertake development early this fall. Little Jack Oil Co., Devils Den., section 28, 25-18, has landed its 12 1-2 inch casing at 2255 feet in hard blue shale, shutting out gas and water. Gas has been very strong. Drilling will soon be resumed, with 10 inch. Turner Oil Co. brought in well 17, sec. 2, 20-15, around June 1st, at 3000 barrels daily, the flow coming through a 1 inch opening, as the pressure made it necessary to "choke" the well in order to keep it under control. The oil is 30 gravity and was reached at 3,815 feet. Dutch-Shell interests, on the W. K. property on 2, 22-15, have brought in well 16 with an initial flow of 1,400 barrels daily of 25 gravity; another "choked" well, as big pressure is behind the flow which comes through a 3-4 inch opening. On the "Limited" property, sec. 34, 19-15, well 30 has come in good for 200 barrels daily of 21.5 gravity oil. Kern Trading & Oil Co., (S. P. Co.), has a new well in the s. e. corner of 19, 20-15, making 500 barrels daily of 19 gravity oil. United Development Co., (Roberts, McKenzie, and allies), is drilling No. 2 on 17, 20-15 into the oil sand at 2,877 feet, after cementing off the water at 2860 feet. Lucille Oil Co., after two years' work, has got wells 3 and 4 producing again, making 75 and 100 barrels, respectively, per day. The water troubles were conquered by "Zed" Phelps after careful study and hard work. Producers Transportation Co. is doubling its line from McKittick to the junction on section 20, 26-19, in Antelope Valley, facilitating the movement of Agency oil with more rapidity. Merrill Oil Co., sec. 14, 20-14, has been taken over by Pevey and Smith, who will re-drill the four shallow wells and continue the production of road oil. Associated Pipe Lines both to Monterey and San Francisco Bay, (Port Costa) are running to capacity and are in tip-top shape.

THE STOCK MARKET

San Francisco

The market for oil shares has never been quieter in the life of the San Francisco Stock Exchange, which is fairly comparable to a graveyard, except that the latter places are probably more visited at present than the former. When the gushers began coming in making cheap oil, the great corporations began paying dividends and the smaller companies began assessing to maintain themselves during the low-priced-oil period. That's the history and the present lack of interest is the result. The outlook is a decidedly quiet one; summer months are seldom buying months.

Following are the latest San Francisco quotations:

COMPANY	BID	ASKED
Amalgamated Oil	78 00	
Brookshire		22
California Midway	03	
Caribou		1 40
Illinois Crude	01	04
Monte Cristo	86	1 00
National Pacific	04	
Nevada County	10	
No. Am. Oil Con.		70
Paraffine	10	
Palmer Union	01	02
Pyramid	03	04
Republic	10	12
S. W. B.	05	10
Turner	2 35	2 55
Yellowstone		12
Monte Cristo Oil 78	100 00	
Standard Oil of California	327 00	330 00

Los Angeles

As usual, oil share trading is much livelier in Los Angeles than up here, as the list attests. The following is the June 9 list:

COMPANY	BID	ASKED
Amalgamated Oil	79 50	81 00
Associated Oil	38 62½	38 87½
Calif. Midway Oil Co.	02½	04
Caribou Oil Mining Co.		1.40
Cenarl		75
Columbia	75	80
Continental Oil		07
Enos Oil Co.		05
Fullerton Oil		1 00
Globe	02	03
Jade Oil Co.	03	
Maricopa Northern	07	07½
Maricopa Queen Oil Co.		15
Mascot Oil Co.	50	75
Mexican Pet. Ltd., pfd		85 00
Mexican Pet., Ltd., com		75 00
Midway Northern	13½	16
National Pacific Oil Co.	03¾	04
New Pennsylvania Pet. Co.	18¾	25
Olinda Land Co (Oil)	26½	30
Rice Ranch Oil Co.		1 00
Trader's Oil Co.		25 00
Union	69 00	70 25
Union Provident Co.		71 50
United Petroleum	72 00	73 00

United Oil Co.	22½	23
West Coast Oil, pfd.	101 00	109 00
Western Union		100 00

It seems superfluous to comment on the absence of quotations of many of the stocks.

SANTA MARIA

By Our Special Santa Maria Correspondent

Pinal Dome Oil Company continues its campaign of expansion, having leased for a term of years a tract of several acres on the Oakland Water front at East Oakland, from the Pacific Steel & Wire Co. A distributing station will be erected here in short order, and Pinal Dome products will be available to all who want the "real thing."

City of San Luis Obispo has petitioned the State Railroad Commission to issue an order directing the Santa Maria Gas & Power Co. to extend its gas mains from Arroyo Grande to San Luis to supply gas for heating and illumination, the Company being entirely willing to make the extension desired.

Associated Oil's Refinery at Gaviota is being enlarged to handle 50 per cent more oil than at present. During work, plant is shut down.

Western Union Oil Co.'s well 51, recently brought in, is making 400 barrels daily of 30 gravity oil. Three strings of tools are running constantly.

Palmer Union Oil Company. Reports from the office in this city are that the shareholders are willingly paying their assessment, realizing that it is for their own benefit. Conditions in the field at present are as follows: A new well is being drilled on the Stendell tract, with a rotary drill. At the main camp, No. 2 is making 150 barrels daily, No. 3, 180 barrels daily; No. 1, 350 daily. No. 5 is 2860 feet down and it is believed that the "bridge" has been broken. No. 11 is making about 100 barrels daily and lots of sand with it (clearing itself). A new superintendent is in charge at the camp, J. F. Borden. Mr. Tooker, heretofore in charge at the camp, is drilling the new well on the Stendell. Pres. Brown continues to energetically superintend all operations and is optimistic of the success deserved.

California Concentrates

Standard Oil will construct a 2-inch pipe line about eight miles long into Simi Valley to take the Petrol Company's product, for which it has recently contracted.

General Petroleum's remaining offices in this city, Alaska Building, it is reported, will be removed to the main headquarters, Higgins Building, Los Angeles. **California Petroleum Corporation**, for first quarter of 1914, earned, net, \$702,180. **Standard, Associated and General Petroleum Companies**, are jointly and severally reported to be closing in their production of light grade oil wherever possible; cheaper to buy it from the fellows who can't shut down.



Where the United States Gets Its Asphalt

By M. C. FREDERICK

EDITOR'S NOTE—With the wonderful development of the automobile and motor driven vehicle in the past fifteen years has come from every hamlet and corner of our country an insistent and irresistible demand for good roads. The sums spent in road construction during this time aggregate hundreds of millions of dollars. Highway engineering has become an art. Every State has a Highway Commission or corresponding body that attends to the construction of new roads and the maintenance and repair of older roads. Every county has a road problem practically all the time. One of the most important departments of every city is its Street Depart-

ment. Every part of the country, in short, is directly interested in and greatly affected by good roads. California is at this time spending eighteen million dollars on highway construction. One of the results of the demand for good roads is the rapid development of the industries supplying good road materials, and of especial interest is the tremendous growth of the demand for California asphalt, the incomparable road building and surfacing material. Where does the United States procure its asphalt? Few people indeed, can correctly answer this question. The writer of the following article is therefore doing the country a service by supplying the valuable answer.

From what source does this country draw its asphalt supply?

Ten years ago the United States handled 284,212 tons of asphalt, more than half of which was imported. Nearly two-thirds of the imports came from the famous asphalt lake on the island of Trinidad, much of the remainder from Venezuela, with small consignments from Cuba, Italy, Germany, Switzerland, Mexico, Canada, Turkey, United Kingdom, British India, Colombia and Austria-Hungary, in the order named.

France was at that time the heaviest producer, her output being 250,222 tons, and held first place until 1907 when there was a falling off and the United States took the lead, with 223,861 tons. We imported 124,430 tons, about half from Trinidad, more than a fourth from Venezuela, the remainder from the countries mentioned, except that France and the Netherlands were added and Austria-Hungary and British India were omitted.

By 1911 a single state, California, supplied 205,197 tons, while the imports were 152,568 tons. The following year California's output had reached 249,331 tons, an excess of 31,000 tons above the imports, and the exports from the United States were valued at \$1,170,882. Figures for 1913 are not available, but as the oil production of the State of California increased ten per cent, it is safe to accord the same rate of increase to asphalt.

At this point we begin to hear the words "natural" and "manufactured" the former applied to asphalt dug from the ground, the latter the residuum of petroleum—and the one is as genuinely asphalt as the other. California has enormous deposits of natural asphalt; sand-

stone and limestone impregnated with it, beds of saturated shale, sand that has soaked it up like a sponge drinks water, asphalt mixed with earth, and deposits of soft asphalt in non-absorbent material. It comes up from the bottom of the sea and is washed ashore; it flows in cascades like stiff molasses down some of the canyon sides.

They find it when drilling for oil. One well reported passing through 120 feet of tarry asphalt. Sometimes it is in numerous streaks or veins of almost pure asphalt. Some "oil wells" turn out "too stiff to bale, too soft to drill," and have to be abandoned because of this "impenetrable mass of tar." The "tar" of one well was shown to correspond exactly to the residue left by oil of another locality after slow evaporation.

And lastly, the base of oil itself is asphalt. The oils of the different wells range from thick, sticky, crude petroleum that when refined may leave a residuum of 50 per cent asphalt, or more, to the light, thin petroleum carrying little or none.

Throw crude asphaltic petroleum on the ground; the volatile oil evaporates, and in time you have "natural asphalt." Separate the oil more rapidly by the application of heat, and you have "manufactured" asphalt. Since the oil is of more value than the asphalt it is of primary importance and the asphalt is secondary, or a "by-product."

In some localities much of the oil-producing shale strata stands on edge and the fluid has escaped, leaving large bodies of tarry asphalt, which hardens on exposure. Whether all bodies of asphalt in the earth,

solid enough to be mined with pick and shovel, have originally been asphaltic petroleum and have had the oil drained off, and hardened by the slow processes of geological change; have had it driven off more rapidly by the internal heat, or never have been associated with oil, nobody knows. The inference seems reasonable that all asphalt may be the residuum of petroleum, acted on in the different deposits by different geological agencies for different periods of time. But on the other hand, are the petroleum, as in Pennsylvania, which leave a residue of paraffin.

The asphalt from oil is constantly gaining ground as a paving material, because it may be reduced to exactly the required consistency, at less cost. In 1912 the United States used only 38.3 per cent natural asphalt. Near Santa Barbara, California, is a large deposit of "pick and shovel" asphalt that in its natural state is 60 per cent pure—a very rich mine; but it has been supplanted by the oil refineries. But very little of the natural asphalt of the state is mined.

That the residue did not at first give the results of the mined material was due to faulty refining and inexperience in applying. A product can now be turned out that tests as high as 99.9 pure. California oil is officially reported to average 29 per cent asphaltum. Some of it runs as high as 57 per cent or more. It is therefore not strange that some oils are suitable for road material without refining.

In the January number of THE CALIFORNIA DERRICK, Laird J. Stabler, Professor of Chemistry, University of Southern California, states that the stills constructed and set in masonry for the manufacture of asphalt, vary in capacity from 100 to 500 barrels. If too large, the longer period of heating the still for the evaporation of the light oils injures the quality of the asphalt. The vapors are conducted into condensing pipes, yielding gasoline, engine distillate, kerosene, stove distillate and lubricating stock.

Quoting from Prof. Stabler: "After the distillates have been removed the residue is asphaltum. A small quantity of the residue, or asphalt, is drawn frequently from the still, cooled and tested by the stillman between his teeth to decide when it is brought to grade. When the stillman decides it is on grade another sample is taken, cooled and tested in the testing laboratory for the penetration. The asphalt is drawn into a large cooling kettle filled with steam. It is necessary to fill the cooling kettle with steam to prevent the hot asphalt from taking fire when it comes in contact with the air. The contents of the still must not be heated above a certain temperature or the asphalt will scorch, and the distilled oils also be injured. This is controlled by superheated steam introduced by means of a perforated pipe along the length of the still, near the bottom, which reduces the temperature at which distillation takes place."

In at least one oil region the asphalt is said to be so pure and uniform, the oil not varying in the slightest degree, that city engineers familiar with it buy it on brand without a further test.

At the close of 1909, in a Government report on the public roads of various states and the material of their construction, California alone is listed as having asphaltic roads—653 miles of them. Today asphalts, the best dust preventatives and road binders known, are extensively used for this purpose in all civilized countries, the broad rubber tires of automobiles, so destructive to ordinary roads, ironing out the asphalt, or oil-paved highway until it is as smooth as a shirt front.

In 1886 the total production of asphalt in the United States was but 3,500 tons, valued at \$14,000. In 1911 it was 364,226 tons, valued at \$3,991,109. In 1912 we produced 449,510 tons, worth \$4,620,731. Of this, California supplied more than half, Texas, Oklahoma and Utah, in the order named, making up most of the remainder. Our imports were 218,382 tons, value \$921,145. Asphalt is found in more than twenty states of the Union and several of them are putting asphalt on the market.

The Government report gives the value of California's output of asphalt for 1912 at \$2,186,403. For the same period the total exports of Trinidad, the chief source of our imports, were 189,496 tons, estimated at \$521,000. The latest report given for France was 1910, production, 187,085 tons, value \$277,210; Italy, 1911, production, 207,926 tons, value, \$591,550. Other countries producing less amounts are Germany, Venezuela, Cuba, Austria-Hungary, Russia and Spain.

Petroleum Production in the United States in 1912-1913

(U. S. Geological Survey)

Eight days after the close of the year 1913, the United States Geological Survey published a very close estimate of the total production of oil in the United States, giving the product of each State. This estimate was prepared from pipe line runs, supplemented by many statements from smaller concerns.

The Survey now in June follows this statement by giving the results of a complete canvass of the United States including also the shipment by tank cars and shipments from oil wells direct to refineries without entering any trunk lines. This canvass involved a complete system of inquiries directed to every petroleum producer in the United States and was entirely independent of the pipeline inquiries. A similar canvass is made each year.

The complete results show an even greater gain from 1912 than was forecasted by the estimate, the total production being 248,446,230 barrels, against 222,935,044 barrels in the previous year.

No effort is made by any statistical agency, except the Federal Survey, to publish a statement of the total value of the crude petroleum at the wells. In 1912 this value amounted to \$164,213,247, or an average of 73.7 cents a barrel.

The feature of paramount interest for 1913 was the enormous increase in this value to \$237,121,388, or 95.4 cents a barrel. Thus the gain in barrels was less than 26,000,000 (25,511,186), while the gain in value was almost \$73,000,000 (\$72,908,141.)

The output increased more than 11 per cent, while the value increased four times that percentage, or 44.40 per cent. Every State except Colorado showed an increase in the value of oil. Every field showed a gain in value, the lowest gain being 15.25 per cent in California and the highest 78.28 per cent in the Mid-Continent region.

DIVIDEND NOTICE

The German Savings and Loan Society
526 California Street, San Francisco

For the half year ending June 30, 1914, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Wednesday, July 1, 1914. Dividends not called for are added to the deposit account and earn dividends from July 1, 1914.

GEORGE TOURNY, Manager.

Engineering and Technical

Reviewing Bulletins, Addresses and Like Matter

Dr. Jos. A. Holmes' Address mentioned in the last issue: The Derrick expects to present to its readers such portions of this address as will appeal particularly to oil men, in the next number. Dr. Holmes' address is filled with common sense and patriotism. It is a plea for conservation where conservation is possible. We feel certain the readers will be fully as pleased to know the ideas of the head of the Bureau of Mines, as we ourselves were upon receiving the copy of the address.

State Highway Engineer Austin B. Fletcher, in a paper recently presented before the Commonwealth Club of San Francisco, said that California's road-building materials were of a very superior quality. We quote:

"The bituminous carpets, using California asphaltic oil, on 90 per cent of the work already done, are far superior in my judgment to the tar and screening carpets of the East which I have inspected. They are also far superior to the bituminous carpets usually applied to the macadam roads in the East, and I can say, after more than twenty years experience in State Highway work, that no Eastern State is today getting its State highways constructed so cheaply, so thoroughly or surfaced so satisfactorily as California."

State Highway Bulletin Issued

The July Highway Bulletin, just issued by the California Highway Commission for free distribution, gives some interesting facts about progress on California's State highway. The work in each county is given in detail. It shows that surveys have been completed on 1,888 miles, and that 607 miles of this is either completed construction or under contract, the greater part being a paved road having a four-inch concrete base fifteen to twenty-four feet wide. In addition about 100 miles is pending award.

Plans are completed for considerable additional work, which will be advertised as soon as right of way and other details can be closed up. Bids are to be opened July 6 for 85.4 miles of construction, located in Shasta, Tehama, Yolo, Santa Cruz, San Benito, San Luis Obispo, Santa Barbara, Kern, Ventura and San Diego Counties.

The Highway Bulletin will be sent without charge to any reader of the California Derrick who will address a request to the California Highway Bulletin, Rialto Building, San Francisco, Cal.

U. S. Dept. of Commerce Issues Annual Report On "Commerce and Navigation of the United States"

The above report for the year 1913 has just been issued and is now available, being sold by the Supt. of Documents, Government Printing Office, Washington, D. C., for \$1.00. The report reveals conditions of trade and industry overwhelming in their magnitude—over four and a quarter billions of dollars business having been done by the United States last year. Exports exceeded imports by 653 million dollars, a very large percentage of trade being in

manufactures. The position of the various big export centers, in relation to the amounts handled, is shown in the report and, in short, a multivariety of indispensable information is presented.

"**Minerals of California**," is the title of a 250 page volume issued by the State Mining Bureau, written by Professor A. S. Eakle, Ph. D., of the University of California, and being sold by State Mineralogist Hamilton for \$1.00—the actual cost of printing. The value of this work is unquestioned, Professor Eakle's reputation assuring this. The book is the result of many years of research and study of the minerals of the State, of which there is an alphabetical index. One chapter of the book is devoted to distribution of minerals by county, a valuable chapter indeed, for ready reference. To many this volume should be "worth its weight in gold."

Chamber of Mines and Oil, Los Angeles, in its latest Bulletin, states that its "Oil Land Legislation Committee" has taken tentative action in regard to the problem of water infiltration in the oilfields "and expects the committee to take some line of action which will lead to a consolidation of Federal and State forces in arriving at a solution" of the problem, the results to be embodied in legal measures which will be submitted to the next state legislature.

W. A. Williams, formerly of the Associated Oil Co., has been appointed chief of the newly created Petroleum Division of the Bureau of Mines, which Division will have charge of all technologic work on the public oil lands. Congratulations are extended to the Bureau of Mines, the public and Mr. Williams—long a subscriber to the Derrick, in his position as Chief Geologist of Associated Oil.

New London Ship & Engine Co., Groton, Conn., will exhibit a 180 h. p. six-cylinder, four cycle, single acting, heavy oil engine—Diesel type. The engine will be one of a large number of Diesel-type engine exhibits. It will be run and the power derived will be put to some use on the grounds.

National Transit Co. has recently issued a booklet 9x12 inches in size, devoted to its gas engines. The booklet is, without question, the most beautiful specimen of trade pamphlets that ever came to the Derrick office. It is illustrated throughout and gives not only an idea of the National Transit Gas Engine itself, but of the Company's facilities for delivery, as well as compilations of data bearing on gas engines and invaluable to the gas engineer. The booklet concluded with the statement that the Company "is in a position to furnish complete installations for gas, oil and water pumping stations" and can furnish "pipe line fittings for all pressures and purposes."

Such a large number of **Oil Land Suits** have been instituted recently that the Derrick cannot follow them all without becoming a law journal, but this publication will endeavor to give all the important decisions wherein oil lands or companies are party to the suit, as always heretofore.

United States Supreme Court Rulings Favor Railroad---Pipe Lines Common Carriers

Six of the seven questions which the Supreme Court was called to pass upon in the so called "Burke" case, wherein Edmund Burke was suing the Southern Pacific Company on the ground that the Department of the Interior had no jurisdiction to issue the patent conveying the lands to the railroad company, were decided against Burke, the seventh question being decided in Burke's favor—and incidentally in favor of the U. S. Government also. The decisions, which were made public June 22nd, are far reaching, indeed, in their various ramifications, but whether they mean complete defeat for the Government's several contentions in the suits now pending against the Southern Pacific and other defendants, is yet a large question. One thing is certain: Oil IS a mineral. * * * It appears as though the Court had again changed the law as made by Congress as in the famous Standard Oil and Tobacco cases, in its answers to the 3rd and 7th questions certified to it. * * * With Attorney Lewers, for the Southern Pacific Company claiming a complete victory and Special Assistant U. S. Attorney General E. J. Justice claiming that the Government's two cases now pending appear to him to be certain of decision in the Government's favor, on the points already decided, it will be seen that there is plenty of room for divergent opinions.

The questions put by the Circuit Court of Appeals in California to the Supreme Court, and the answers returned by the highest court, were:

1. Did the grant to the Southern Pacific Railroad Company include mineral lands which were known to be such at or prior to the date of the patent of July 10, 1894?

Answer—Mineral lands known to be such at or prior to the issue of patent were not included in the grant, but excluded from it, and the duty of determining the character of the lands was cast primarily in the land department, which was charged with the issue of patents.

2. Does a patent to a railroad under a grant which includes mineral lands as in the present case, but which is issued without any investigation on the part of officers of the land office or Department of the Interior as to the quality of the land, whether agricultural or mineral, and without hearing upon or determination of the quality of the lands, operate to convey lands which are thereafter ascertained to be mineral?

Answer—A patent issued in such circumstances is irregularly issued, undoubtedly, but as it is the act of a legally constituted tribunal and if done within its jurisdiction it is not void and therefore passes the title subject to the right of the government to attack the patent by direct suit for its annulment, if the land was known to be mineral when the patent was issued.

3. Is the reservation and exemption contained in the grant in the patent to the Southern Pacific Railroad Company void and of no effect?

Answer—The mineral land exception in the patent is void.

4. If the reservation of mineral lands as expressed in

the patent is void, then is the patent upon a collateral attack a conclusive and official declaration that the land is agricultural and that all the requirements preliminary to the issuance of the patent have been complied with?

Answer—It is conclusive upon collateral attack.

5. Is the petroleum or mineral oil within the meaning of the term "mineral" as was used in acts of Congress reserving mineral lands from the railroad land grants?

Answer—Petroleum lands are mineral lands within the meaning of that term in railroad land grants.

6. Does the fact that the appellant was not in priority with the government in any respect at the time when the patent was issued to the railroad company prevent him from attacking the patent on the ground of fraud, error or irregularity in the issuance thereof as so alleged in the bill?

Answer—It does.

7. If the mineral exception clause was inserted in the patent with the consent of the Southern Pacific Railroad Company and under an understanding and agreement between it and the officers of the Interior Department that said clause should be effective to keep in the United States title to such of the lands described in the patent as were in fact mineral, are the Southern Pacific Railroad Company and the Kern Trading and Oil Company estopped to deny the validity of said clause?

Answer—Such an agreement is of no greater force as an estoppel than the exception in the patent. The latter being void, the patent passes the title and is not open to collateral attack or attack by strangers whose only claim was initiated after the issue of patent.

After reading these question and answers carefully it seems clear that Burke's case is lost because it IS Burke's case, but that the U. S. Government, through the Department of Justice, may win ITS cases, now pending.

PIPE LINES ARE COMMON CARRIERS

The same day the Burke decision was announced, the constitutionality of the Congressional pipe line act of 1906, placing all interstate oil pipe lines under Interstate Commerce Commission regulation, was upheld by the Supreme Court. The law was not, however, held applicable to the Uncle Sam Oil Co., because that company "merely carried oil across one state line for its own use." But all the other pipe lines were "held virtually common carriers in all but one state." The result in California will probably be immediate action by the State Railroad Commission in its rate-fixing duties under the Common Carrier Pipe Line Laws of California, passed through the efforts of Timothy Spellacy, J. W. Jameson, T. J. Wrampehneier and a few other independents and fought by every interest, including the Producers Transportation Co., owning pipe lines in this State, EXCEPTING Standard Oil. The measure was drafted by Francis J. Heney.

Statistics--Production, Exports, Etc.

Growth In The Production of High Gravity Oils In California

Standard Oil has made public the figures showing the growth in the production of refining oils since Dec. 31, 1911, in six month periods, and the gradual decline in the production of heavy gravity oils during the same time. There is history in these figures; they have a very material value. We are presenting them for that reason:

—Barrels (42 gallons)—			
Six months ending	Under 20deg	Over 20 deg.	Total
December 31, 1911	28,052,191	15,325,631	43,377,822
June 30, 1912	26,437,746	17,223,996	43,697,742
December 31, 1912	25,500,954	20,875,743	46,376,697
June 30, 1913	25,070,035	22,151,801	47,221,836
December 31, 1913	23,602,839	27,042,509	50,645,348

Exports of Petroleum Products from California In May

May was a slack month as far as exports from this State were concerned, there being a difference of 13¼ million gallons in April's favor, and a consequent diminution of returns amounting to \$325,452. June will probably prove a much larger shipping month than May.

All California exports in May are given in detail in the following table:

	Gallons	Dollars
CRUDE:		
San Francisco	42	4
Southern California	1,750,000	21,000
ILLUMINATING:		
San Francisco	11,897,922	539,890
Southern California	965	162
LUBRICATING AND PARAFFINE:		
San Francisco	167,486	18,315
Southern California	319	113
NAPTHAS, GASOLINE, ETC.:		
San Francisco	679,425	63,258
Southern California	4,935	552
RESIDUUM, GAS OIL and FUEL OIL, ETC.:		
San Francisco	20,672,307	340,405
Southern California	22,060	425
Total San Francisco	33,417,182	961,872
Total Southern California ...	1,778,279	22,252
Grand Total	35,195,461	984,124

Production, Consumption and Field Operations During May

(Standard Oil Figures)

Production did not reach 315,000 barrels daily in May, or indeed, even 300,000 barrels, but had all the wells capable of producing been at work, the output would have been around 311,000 barrels daily. As it was, however, the production broke all records to date, increasing from 284,701 barrels daily in April to 297,466 barrels daily during May. The highest daily average output heretofore was 11,000 barrels per day smaller than this new record and was attained in March of this year. The total output for the 31 days of May amounts to 9,221,446 barrels. Shut-in production is still estimated at 14,000 barrels daily. Daily surplus over shipments during May is given as 22,337 barrels, indicating a falling off of shipments in May as well

as the increased output. With the shut-in production the figures show an apparent over-production of 36,337 barrels daily. This is gusher oil, chiefly from the big to the surplus are the Lakeview No. 2 Oil Co.'s spectacular gusher, now making about 18,000 to 20,000 barrels daily; new high gravity wells in 32, 12-23, Midway, belonging to the General Petroleum Co., and all making over 2000 barrels daily; the Miocene Oil Co.'s No. 2 well, also in section 32, 12-23, making 2000 barrels daily; Kern Trading & Oil's No. 21, section 1, 32-23, 2800 barrels of 28.8 gravity Baume; Standard Oil's No. 5, section 16, 32-24, 1500 barrels of 27 gravity, all in the Midway-Sunset. In Coalinga the "Oil-fields, Limited" got a 1600 barrel producer in its No. 16, section 2, 20-15, gravity, 28.6. Depth 3728 feet. The Standard's No. 10 on the famous Emery lease, Whittier-Fullerton, section 13, 3-11, came in good for 1400 barrels of 27 gravity. Other May wells were not so unusual as to cause special comment. The number of wells producing on May 31, is given as 6,097, which is an increase of 95 over April producers; as but 57 were completed in May, the remainder were probably put back to production after being closed in. This is a mere matter of inference.

FIELD	New Rises	Drilling	Completed During Month	Abandoned During Month	Producing	Production Per Day
Kern River	10	3	1	1,431	20,395	
McKittrick	3	1	1	250	9,741	
Midway-Sunset	84	27	1	1,367	147,118	
Lost Hills-Belridge	7	12	2	224	13,244	
Coalinga	1	32	3	859	44,158	
Lompoc and Santa Maria	1	13	2	236	12,255	
Ventura County and Newhall	5	30	6	411	2,905	
Los Angeles and Salt Lake	6	6	1	681	6,984	
Whittier-Fullerton	10	83	8	525	40,438	
Summerland	1	1	1	108	153	
Watsonville	1	1	1	5	75	
Salinas Valley	1	1	1	1	1	
Total	47	273	57	4	6,097	297,466
Total crude oil stocks May 31, 1914, 50,318,025 barrels.						
Total shipments from fields, May, 1914, 8,528,995 barrels.						

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

Let the FACTS presented in this number of the Derrick speak for themselves!

Relief Bills pending in Congress, may be passed this month and then again they may not be passed. Whatever bills are passed and BECOME LAW, will be published in The Derrick as soon after passage as possible.

* * * * *

Calgary-Alberta Oilfields—A descriptive article about the newly discovered Canadian oilfield has been written for us by Mr. M. R. McLeod, formerly editor of the Alberta Mineral Age, and it is on the way to us, but will arrive too late for publication in this number. We received a telegram saying the article had been mailed just as we are ready to go to press. The delay, while regrettable, may permit us to obtain illustrations to accompany the article. At present there is a lull in the stock-selling end of the Alberta Oil Business, while wells are being driven. Th lull will undoubtedly end with a jolt when the next well is brought in. Thus far only one well, the "Dingman" discovery hole, has struck oil. Read the next number!

* * * * *

June Issue "Standard Oil Bulletin" contained their most interesting offer of information since the first number published, a big chart "showing in graphic form, the production, shipments, storage and average value of California Crude Oil from 1900 to 1913 inclusive. The storage and shipments from 1900 to 1905 are estimated. The shipments for the entire period represent pipe line shipments from the field and stocks include only pipe line and field

stocks." What the chart shows is this: When there was less oil in any year than the market called for, prices in the field were high; when there was more oil on hand than was immediately necessary, the prices paid to producers declined. The "value" line takes a precipitous drop, dreadful to contemplate, between the beginning of 1901 and 1902, when the production increased from 4,309,950 to 7,710,315 barrels, the decline being from 95.9 cents to 38.4 cents. From 1902 to 1906 the production continued to increase, as did shipments and storage, and average price declined to 27 cents per barrel. Output and sales continued to mount wonderfully and in 1907, 1908 and 1909, the price went up rapidly, reaching the close of 1909, 54 cents per barrel, the highest average since 1900. Then came the gushers and the 1910 and 1911 slump in prices, while output and storage mounted rapidly. The average price per barrel increased from 40.1 cents per barrel in 1911 to 42.6 cents in 1912 and last year amounted to 46 cents per barrel. The Standard has performed a valuable service to both the Oil Industry and the public by the publication of this data and the Derrick believes this service will be appreciated. Feeling that our readers will be very glad to have in full the information presented in the company's "Tabulation of Data" we reproduce the table hereunder:

TABULATION OF DATA

Year	Production for Year—Barrels	Shipments for Year—Barrels	Storage at End of Year	Average Price for Year
1899	2 677 875	2 577 875	200 000	\$ 994
1900	4 319 950	3 919 950	600 000	.959
1901	7 710 315	6 560 315	1 750 000	.384
1902	14 356 910	12 705 910	3 400 000	.327
1903	24 334 481	21 734 481	6 000 000	.300
1904	29 548 634	24 698 634	10 850 000	.280
1905	34 298 041	26 630 945	18 517 096	.263
1906	32 623 229	31 528 806	19 611 519	.283
1907	40 102 512	45 469 160	14 244 871	.370
1908	48 306 737	48 589 163	13 962 445	.522
1909	58 191 723	52 455 407	19 698 761	.540
1910	77 697 568	66 543 466	30 852 863	.420
1911	83 744 044	72 933 793	41 663 114	.401
1912	90 074 439	86 075 887	45 661 666	.426
1913	97 867 184	96 695 061	46 833 789	.460

ALL BARRELS OF 42 U. S. GALLONS

SHIPMENTS & STORAGE 1899-1905 ESTIMATED

AVERAGE PRICE IS FOR OIL AT THE WELL.

* * * * *

Union Renews Help to Agency—Responding to a request from the Agency management as to what stand it would take upon the questions of taking care of North Midway oil, and of building additional storage, the Union Oil Company has replied that it will continue to take care of the North Midway oil without charge to the Agency and will continue to store Agency oil without charge.—(Cal. Oil World.)

* * * * *

Purchases Sulphur Mountain Equipment — Messrs. WOODS & HUDDART, California agents for the South Chester Tube Company of Chester, Pa., have recently purchased the entire equipment of the Combined Oil Company on their Sulphur Mountain property, consisting of complete drilling outfit, with casing, drills and everything generally found in a well equipped camp. We understand they have already found a customer for a big part of the material but they still have some odds and ends which can be purchased at a reasonable price—a good opportunity for nearby companies to avail themselves of in case they need anything of this nature, and what lease doesn't? It is very probable that this firm, Woods & Huddart, will go extensively into the business of buying up property of this kind in connection with other parties, as there is a very good demand for used supplies at reasonable rates throughout the State.

Interesting Developments of Recent Date

Independent Oil Producers Agency's Annual Meeting. was held on Wednesday, June 17, and was remarkable for an apparent unanimity of spirit, self-confidence and confidence in each other. The old officers were re-elected to a man; fourteen companies and operators were admitted to membership; the proposed appraisalment of the properties of the entire properties of the Agency Companies was ratified and the distribution of a surplus of \$228,000 was announced. The secretary's report of the Agency's finances and business during 1913, showed the following:

Total sales aggregated \$4,551,161. Total distribution was \$4,520,000. Barrels of oil sold, 16,625,000; net price received per barrel, about 27-28 cents. (The figures published in the last issue of the Derrick, 26 cents was pretty close.) Storage was given as 10,609,000 barrels, an increase of 186,000 barrels for the year over storage at the end of 1912. On the whole, 1914 is expected to be a prosperous annum.

Southern Pacific Co. is to begin operations on lands which the Government has been suing for, now that the case against them has been decided (apparently) in their favor. According to a report reaching us July 3rd, the K. T. O. Co. will soon drill six or seven wells in the Sunset Midway district, and about fifteen in Coalinga. Our informant stated that the Co. had requested bids from a number of supply houses for supplying necessary material for the Midway-Sunset wells.

United States Naval Base at Richmond—A naval supply base of 325 acres of ideally located land on San Francisco Bay, south of the city of Richmond, is reported to have been temporarily secured by option for the United States Government. Every possible facility for a naval supply base is afforded by the new tract, with all the great pipe line system terminals in the immediate vicinity, three transeontinental railroad systems and deep sea frontage. A most interesting report and one that will be carefully followed by a great many interests.

Pipe Lines in U. S.—The Wall Street Journal recently printed an article on pipe lines in which the total pipe line mileage was estimated at 55,000 to 65,000 miles, of which "upward of 40,000 miles are owned by former Standard Oil Companies and something like 15,000 miles by "independents."

Elected Secretary of Standard Oil (California). H. M. Storey, director of pipe lines of Standard Oil, has been chosen secretary as well, succeeding F. H. Hillman, who has been elected a vice-president, and is also director of producing.

CALIFORNIA CONCENTRATES

Universal Oil Co., Lost Hills Field, produced 75,000 barrels of oil in May; **General Petroleum** in same field, produced close to 65,000 barrels—light oil.

Reduces Prices Again—Effective July 1 the Standard Oil Company cut its prices on refining grade oils 5 cents per barrel, the second 5 cent cut inside two months. Fuel oil is not cut. The cut affects such companies as sell on daily runs, not those under contract, but contracts will be renewed under the lowered prices. Whether the cuts will tend to conserve the light oil by causing a suspension of operations, remains to be seen.

Standard Oil is starting construction work on the foundation for twenty new steel tanks of 55,000 barrels capacity each, at El Segundo refinery. This may indicate Standard's belief in the necessity of plenty of room for stored oil. It is reported here, also, that a mile long breakwater will be built at El Segundo, to assure oil delivery.

National Pacific Oil Co., Midway, has just sold 10,000 barrels oil at \$4500. The Company has no debts.

State Consolidated Oil Co., which opened up a new shallow pool a few months ago, is finishing its No. 7 well in 150 feet of oil sand, at 1200 feet. A big producer is expected.

Amalgamated Oil has struck oil in its well No. 1 on its 80-acre La Habra Valley lease to the east of the Monte Christo's new well, which only a couple of months back proved up this frontier territory. Good management and experience usually "get there."

The American Gasoline Co., has purchased 200 acres of land close to their refinery site at Martinez.

Obispo Oil Co.'s No. 2 well is reported making in excess of 5000 barrels daily; this well is said to have earned close to \$700,000 since the first of the year.

Output of Columbia Oil Producing Co. is averaging more than 90,000 barrels of oil per month.

Calumet Oil Co. is drilling a deep well in Bardsdale for purposes of discovery. Hole is now more than 2500 feet deep and going straight down, looking for a big, productive sand way below known formations. A good producing sand is reported to have been struck at 2100 feet.

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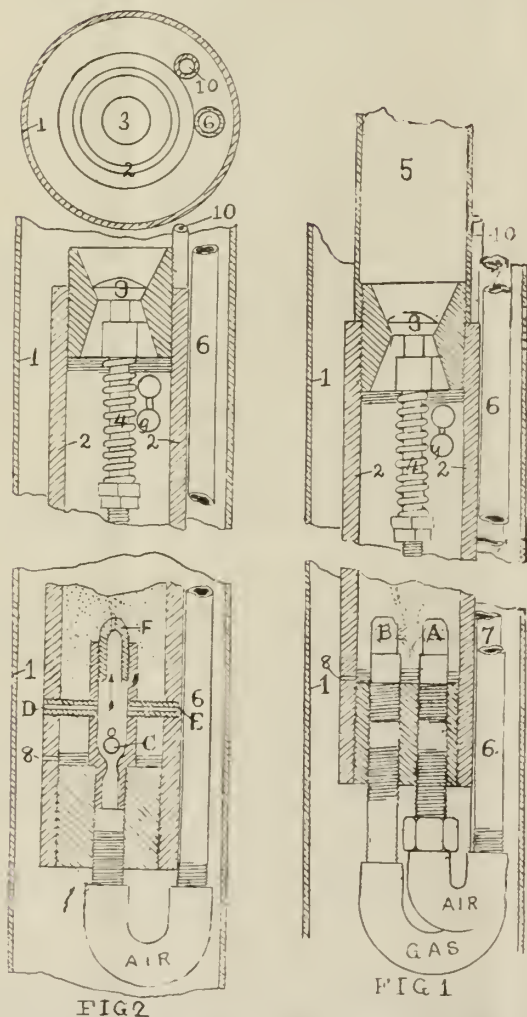
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Internal Combustion Heater and Lift

Described by Its Inventor, A. S. COOPER



In California, as elsewhere, there are many wells that contain heavy petroleum oil of 12 to 17 degrees Baume, or even heavier. To remove the very heavy oil from the wells has been very difficult and various methods have been devised to overcome the multifarious troubles besetting the producers of the tarry product. Ordinary pumping has proved next to impossible. Heating with steam has proved unsuccessful. Compressed air used as an "air lift" by its expansion congeals the oil, making the situation worse. Thin distillates emptied into the well, with the hope of dissolving the heavy oil, fails because of the difficulty of mixing. It will be seen that all these expedients have in view the necessary step of increasing the liquidity of the heavy oil, so that it can be removed, but, so far they have been unsuccessful.

The invention hereinafter described, in its essence, contemplates the increase of the liquidity of the heavy oil, by subjecting it within the well to the heat of explosive combustion; and it further contemplates the removal of

said oil thus treated, by the "lift" assistance of the resultant gases of said explosive combustion.

The manner in which this invention may be utilized is fully illustrated in the accompanying drawings in which—

Fig. 1, is a vertical, in part, sectional view, showing a portion of a string of pipe-casing, the exploding chamber and one means of supplying the explosive mixture and of applying the heat of explosion.

Fig. 2, is a similar view, showing another means of applying the heat of explosion, and another means of supplying the explosive mixture. In both these views similar numerals and letters indicate similar parts.

In Fig. 1, a portion of a string of casing-pipe is indicated by 1, while 2 is the explosion or combustion chamber, which it is to be understood is submerged in the heavy oil within the casing 1. This chamber has an upwardly opening puppet valve 3 at its top, held normally closed by a spring 4. This valve controls the communication of the explosive chamber of a string of pipe 5 which is to lead to the surface. 6 is a pipe which leads compressed air from the surface into the explosive chamber, through the ball valve A. 7 is a pipe which conveys compressed gas from the surface and injects it into the explosive chamber through the ball valve B where it mixes with the compressed air, thereby forming the explosive mixture with which the chamber 2 is supplied. 8 is an orifice through which, if any liquid leaks through the valve 3 is forcibly ejected from the chamber 2. 9 is an incandescent wire or tube. 10 is the electric wire to the incandescent wire or tube.

The apparatus thus described is used as follows:—A certain amount of compressed air is forced down the pipe 6, and is mixed with the right proportion of compressed gas, which is forced down the pipe 7, to make an explosive mixture after they have entered the explosive or combustion chamber through the ball valves A and B.

Suppose now, that an explosion has just taken place, having been ignited by the incandescent wire or tube 9, the explosion closing the ball valves A and B and driving the puppet valve 3 from its seat. As the gases produced by the explosion are under high pressure they instantly rush out or exhaust themselves through the opening made by the puppet valve being raised from its seat. At nearly the same time a fresh supply of air and gas under pressure enters through the ball valves A and B and the explosion chamber is again filled with gaseous mixture in place of the burned gases that have just rushed out, and which are ascending to the surface through the string of pipes 5. This cycle of operations is constantly repeated.

Liquids ascending through the casing 1 come in contact with the heated combustion chamber 2 and the heated pipe 5. The liquids are thereby expanded and liquefied to such a degree that they can be pumped and otherwise handled the same as light oils.

Referring now to Fig 2, it will be seen upon comparing it with Fig 1, that products of the explosive combustion instead of passing up through the pipe 5, are delivered from the explosive chamber directly into the body or

(Continued on Page Twelve)

Santa Maria and Ventura Companies

SANTA MARIA

Shaw Ranch Oil Co.'s well has been put down 2200 feet in 26 days—pretty fast time. Santa Maria Oilfields, Ltd., is drilling a new well with a Union Tool Rotary, on their property adjoining the main camp of the Palmer Union Co. Palmer Union Co. has erected a 106 foot derrick on their Stendell property, 500 feet from the new well of the S. M. Petroleum and Pipe Line Co., the "Henderson" well. The California Well Drilling Co. is drilling the Palmer's new hole. E. T. Edwards, president of the Drilling Co., says that the new well is "a certainty." Both Mr. Edwards and President Brown of the Palmer, expect to finish the well inside sixty days. Equally as interesting as the drilling of this new well is the decision to deepen oil well No. 10, in the main camp, to 3600 feet. This well will be carried down with 8 inch casing in the expectation of getting a high gravity oil deep beneath the heavy oil sands from which the Palmer now procures its famous asphaltic oil. If the well gets commercial light oil the value of the company's properties will be trebled immediately. If the high gravity product underlies the wonderfully thick beds of fuel oil in the Cat Canyon district—or Eastern Santa Maria Fields, as it should be termed—and is comparable in quantity to the original fuel product, the wealth of the Santa Maria fields will be immediately added to and the desirability of Santa Maria oil properties incalculably enhanced. Not a few operators and several of the foremost of the State's geologists have expressed the opinion that light oil will be obtained in the Palmer or Eastern Santa Maria field at depth and the Palmer management's determination to make the test was undoubtedly not a little swayed by the favorable expressions of these authorities. It is almost needless to state that great expectations are centered in this test.

Pinal Dome Oil Company continues its steady expansion in all departments of the business. This aggressive, conservative and well managed corporation is probably the strongest independent company doing a general oil business in the State, next to Union Oil. Its growth is purely the result of its customers' appreciation of its superior products. An acute business foresight has placed the company in a position where it can compete with any rival now in the field for trade in such products as it now turns out.

In the Field

One of the latest acquisitions of property consists of about 5000 acres of the Harris Tract, the Graciosa retaining its wells and protecting its lines by keeping a strip of 800 feet. The Pinal people already have a well down on this new tract to a depth of 1700 feet.

Three months back the Company acquired a body of 3500 acres on the Escolle, Zabala and Newhall tracts, all adjoining properties on which they now have a well down 1200 feet. These new holdings are located southwest of and adjoining the Union Oil, Associated Oil and Refining and Producing Company's tracts, the Zabala tract adjoining the latter Company's property, while a part of the Escolle tract adjoins the Union's famous Hartnell property, the gusher on which made Union Oil

one of the great factors in the oil business in this State. The addition of this big prospective acreage to what the Pinal-Dome already owns and controls under lease and option strengthens them greatly and is well in harmony with their policy of expansion.

In addition to their other refining operations the Company are now installing an asphalt plant at the Betteravia refinery and when they enter the asphalt market they will do so with a product inferior to none.

New Distributing Station

The Company has rented a supply station in Berkeley from which deliveries are being made temporarily, while the new distributing station on the Oakland Estuary at the foot of Livingston Street is being erected. This station will cost between \$35,000 and \$40,000, when completed, and will be absolutely fireproof, being constructed entirely of steel, concrete and galvanized iron.

The new station will be up-to-the-minute in every detail. The property on which it is situated lies at the very end of Livingston street, with 425 feet frontage on the Oakland Estuary, 245 feet frontage on Livingston and 39 feet on Dennison. As a whole the property comprises about two acres, triangular in shape, and has the advantage of rail as well as water transportation. Work on the construction of this station is progressing rapidly, four steel storage tanks 30 feet high and 16 feet in diameter, of 1000 barrels capacity each, being already installed and surrounded by a rectangular concrete reservoir 98 feet long, 54 feet wide and 9 feet high. There is room in the reservoir for two more tanks than have yet been erected. Those already installed are for gasoline, kerosene and distillates. Several 1000 barrel crude oil tanks will be added to the station later on. There will be four 1500 gallon measuring tanks, already on the ground, but not yet in place; a motor house with two motors; a pump house with four pumps, a commodious warehouse, loading house and garage with room for four trucks, and the office building. No wood is used in the construction of any of the buildings, so that the plant is absolutely fire proof. Every storage tank is "water-sealed," covered with six inches of water. The tanks are so built that all gas forming in them and escaping, runs into a condenser and is conducted back to the tank from which it escaped, with no loss. The new plant is expected to be completed inside four weeks. Construction work is being done under the superintendency of H. J. Crase and Mr. Voorhies, and is thorough in every particular.

SOME VENTURA COUNTY HAPPENINGS

Bard Oil & Asphalt Company's new deep well is reported to have a good production, so much so that it is very likely the Company will drill another well in the immediate vicinity in the near future.

U. S. Waugh and Los Angeles Associates, operating under the name of the "D. M. W. Company," have taken over the old Slocum lease near Santa Paula and are cleaning out the old wells and getting them into condition, which will give the operators a fair production from the start. The Company will drill a number of shallow wells, beginning in the very near future, and these, with the production of the old timers, should make the lease a nice proposition.

COALINGA

Guy H. Salisbury's Special Report

S. N. Root's Well, section 13, 21-14, will be recemented, as the last "job" didn't hold. Inasmuch as the nearby wells of the Commercial and Coalinga Consolidated were spoiled by water, careful work is being done on the Root well. Little Jack Oil Co.'s No. 1, Devil's Den, is down 2300 feet, having landed the 12½ inch casing. Formation blue shale. A tremendous casing order has been placed by the Kern Trading & Oil Co., (S. P. Co.) with Pittsburgh Rolling mills, the casing to be used in completing wells already partly drilled. Five miles of casing is said to have been ordered. Marathon Oil, Devils Den, is down 2100 feet, 8¼ inch casing; going. Formation, brown shale, some gas. Oakshade Oil Co., Parkfield, is cleaning out the old hole, which is 2200 feet. Management expects commercial oil at 2400 to 2500 feet and will "go to it hard" to get there. Standard Oil's first well on the Domengine lease, extreme north Coalinga field, is a good water well and will be used as such; oil well No. 1 will be started a few feet away. The water product of original No. 1 is said to be fair boiler water. United Development Co. is 30 feet into the oil sand with a tip-top hole in its well No. 2, sec. 11, 20-15, at 2900 feet. The well is thoroughly cemented off from the water and will make a good producer. Southern Pacific Company has repaired its road up Wartham Creek to Alcalde, oil cars are now at the loading rack on section 13, 21-24, the Berkeley-Coalinga and the Spokane-Coalinga Oil Companies ship their oil from this station. The Homestead of "Tom" Hannah, section 25, 25-18, Devils Den, was drilled on without his knowledge or consent about five years ago and a shallow well secured from which as much as five barrels of oil per day has been taken off. The result is that now parties interested in nearby property are asking for bids on drilling work, presaging early development.

PARKFIELD RECEIVING MUCH ATTENTION

The new road over the grade from Parkfield, in Monterey County to Coalinga, is now in good shape and a weekly automobile stage service has been opened. As a result of the good condition of the road the Parkfield district is experiencing many benefits, and while the road cannot be entirely credited with the interest that is being manifested by a goodly number of oil operators, it undoubtedly a great deal to do with their calculations and development work. Those interesting themselves in Parkfield at the present time are the practical oil men who can best be expected to know an oilfield in the making. Among the companies operating are the Future Success Oil Co., the Parkfield Syndicate, Oakshade Oil Co., Middle Ridge Oil & Development Co., The Petroleum Co., and the Parkfield Pioneer Oil Co. The report of their operations will undoubtedly be of interest.

Future Success Oil Company, drilling on section 18, 23-15, Mr. R. C. Baker of Coalinga, President, is down 1620 feet, with quite a showing of oil and gas. Mr. Baker seems well pleased with conditions. He has considerable land in the vicinity of the present well.

Parkfield Syndicate, composed of Mr. H. G. Anderson, superintendent of the General Petroleum Company, Superintendent Hively, of the K. T. & O., and quite a number of other oil men of the Coalinga and Midway fields, has nearly two thousand acres near the town of Parkfield, in sections 16, 23, 25, and 26, 23-14 and in sections 30, 31, 32, and 33, 23-15. They have let the contract for three test wells to Page & Carlton and they are now at work drilling on Section 26, 23-14, immediately adjoining the town of Parkfield.

Oak Shade Oil Company, which had a well down 1909 feet in section 8, 23-14, has been taken over by the recently organized Monterey Oil Company, which concern is backed by San Diego, Spokane and Chicago capitalists. The new company has obtained about three thousand acres in the vicinity of the Oak Shade well and are now at work completing the present well. They are down about two thousand feet and have a good showing of oil. They are having some difficulty with gas.

Middle Ridge Oil & Development Company, recently incorporated by Judge C. P. Gould of Parkfield, associated with Mr. Ed. D. Gillette, superintendent of the W. T. & M., Tightwad, Carbo and other properties of the Wright Brothers group in the Midway Field, has obtained leases on approximately twenty-five hundred acres of land in township 23-14, about four miles northwest of the

town of Parkfield. They are now at work building derrick for the first well.

Petroleum Company, of Los Angeles, Brand & Stevens, Ltd., who are operating in the Fullerton field, have recently obtained leases on some twenty-five hundred acres of land in 24-13 and it is said that they are going to move a Standard rig in and begin development work shortly.

Parkfield Pioneer Oil Company, which controls under lease and option approximately seven thousand acres in the Parkfield district, is preparing soon to begin work on its first well. Mr. Henry B. Hayden, of San Francisco, president of the Parkfield Pioneer, recently took a trip through the district with some San Francisco people who are considering interesting themselves in the Company. Operations will be under Mr. Hayden's supervision as he is general manager as well as president.

Other Operations are reported, but are too indefinite to merit repetition at this time. It is believed, however, that inside a month there will be several more companies, well financed, on the scene with complete drilling layout.

Internal Combustion Heater and Lift

(Continued from Page Ten)

mass of the heavy liquid which is in the casing 1. The heated gases of explosive combustion thus come in contact with the liquid, which is thereby expanded and liquefied to such a degree it can be pumped. Besides heating the liquid, the heated gases on account of having been discharged under a column of liquid will lift said column in a series of layers and intervening bubbles and bring the same to the surface.

The device illustrated in Fig 2, is operated the same as that of Fig. 1, with the exception that instead of gas being employed the oil in the well is used. Compressed air is forced down from the surface through the pipe 6, and enters the combustion chamber through the ball valve C. The air passing by the oil tubes D and E, draws the hot liquefied oil from the outside surface of the combustion chamber. The spray burner F by compressed air breaks the oil into minute particles which impinge on the hot walls of the combustion chamber and are instantly gasified; when they reach the incandescent wire or tube 9 they are ignited. When the explosion takes place the ball valve C is closed, stopping the gases of combustion from entering the air pipe 6. Then

(Continued on Page Thirteen)

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THE STOCK MARKET

The vacation season being in full swing, peace reigns in the stock markets—at least as far as oil shares are concerned. Opportunities are numerous to buy, for as low as a tenth of their values, stocks in a large number of California Oil Companies. Opportunities, such as exist at present have never as far as our knowledge extends, been equalled on the Oil Exchanges. Enough said:

San Francisco Quotations

Few stocks are quoted on Bush Street these days, as the following official list attests:

COMPANY	BID	ASKED
Caribou	1 27½	1 50
Coalinga Central	15	
Illinois Crude		03
Marieopa 36		30
Monte Cristo		90
No. American Oil Consolidated		70
Paraffine	10	
Palmer Union	01	02
Pyramid	03	
Republie	10	
S. W. & B.	05	
Turner	2 50	

Los Angeles Quotations

As usual, "Los" displays a livelier interest than our "city by the Golden Gate," which is quite TOO "serene" and "indifferent of Fate," when it be considered that San Francisco owes more to OIL right now than to anything else. Following is the Los Angeles list:

COMPANY	BID	ASKED
Amalgamated Oil		82 50
Associated Oil	38 37½	
California Midway Oil Co.	02½	07½
Caribou Oil Mining Co.		1 40
Central		75
Columbia	77	80½
Continental Oil		15
Enos Oil Co.		05
Euelid Oil Co.		10
Fullerton Oil	1 00	3 75
Globe	01½	03
Marieopa Northern	05¾	06¾
Marieopa Queen Oil Co.		17
Mascot Oil Co.		55
Mexican Pet. Ltd., Pfd.		75 00
Mexican Pet. Ltd., com		65 00
Midway Northern	12½	15½
National Pacific Oil Co.	03¾	04
Olinda Land Co. (Oil)	26	30½
Rice Ranch Oil Co.	90	1 03
Trader's Oil Co.		25 00
Union	66 50	67 00
United Petroleum	65 00	68 00
United Oil Co.	22¾	23
West Coast Oil, pfd	101 00	108 00
Western Union	75 00	

Internal Combustion Heater and Lift

(Continued from page Twelve)

the hot gases of combustion behave in the same manner as described in Fig. 1. This cycle of operations being constantly repeated.

In a gas or oil engine the time of ignition is a very important point to be considered, but, as the explosions in an internal combustion heater and lift are not synchronized with the movement of machinery they can be irregular without doing any injury. The rapidity of the explosions will depend to a great extent on the pressure maintained in the pipes supplying air, gas and oil for the explosive mixtures.

In explanation of the operation of the internal combustion heater and lift the following is given. It is said that the temperature of the burning mixture in the cylinder of a gas or oil engine at the moment of its release is seldom lower than 1,500 degrees Fahrenheit and frequently as high as 2,200 degrees Fahrenheit. These temperatures are lowered by expansion in the exhaust pipe, so that pyrometers placed therein show temperatures as low as 600 degrees Fahrenheit and as high as 1,000 degrees and even higher.

The most wasteful forms of oil engines, those burning one pound of oil per horsepower and over, are receiving from the fuel upward of 18,000 B. T. U.'s and accounting for but 2,542 B. T. U.'s in the shape of work, and even the Diesel engine receives 9,000 to 11,000 B. T. U.'s in its fuel for every 2,545 B. T. U.'s represented by work done at the shaft. Deducting friction practically all the heat units not represented by work done appears in either the jacket water, or in the exhaust, so that in case of the most economical oil engines about 60 per cent of all heat of the oil appears to be recoverable theoretically in the shape of heated water or oil. In the case of the more wasteful oil engines nearly 80 per cent of all the heat of the fuel will appear in the exhaust or jacket water. But whatever may be the percentage, more than half of this lost heat can be saved where there is any demand for hot water, or where heat of low temperature not exceeding 250 degrees Fahrenheit, can be used as in the dry room, in hot water radiators, and the internal combustion heater. **The internal combustion heater and lift being submerged in the oil, all the heat that is lost through the exhaust and water jacket of a gas or oil engine, will be used.**

The above means that for every brake horsepower hour in the case of a wasteful oil engine 7,000 B. T. U.'s may be recovered and in case of a Diesel oil engine from 2,500 to 3,000. Hence the more economical gas engine will yield nearly 3,000 B. T. U.'s in heat or hot water or oil per brake horsepower hour, and the more wasteful gas engines considerably more.

One cubic foot of cooling water per horsepower hour in engines of 100 horsepower is required for the jackets when the engine is operating at load factors of about 75 per cent, the water entering the jacket at about 70 degrees Fahrenheit and leaving at 135 degrees Fahrenheit. If this water is passed from the jacket outlet to the exhaust, after having passed through the same it will have a temperature of 200 degrees Fahrenheit.

A gas has been found to expand by 1-273 of its original volume for each degree Centigrade, or by 1-461 for each degree Fahrenheit, of increased temperature, an approxi-

mate expression for both increased heat, and increased volume in the same number.

When highly heated gases are generated in a water well, some steam will be formed which will assist in raising the water in a similar manner as a gas or air lift, until it condenses.

The effect of these heated gases on heavy petroleum oil will have to be ascertained by experiment. Some practically incompressible gases will probably be formed, which will assist in a similar manner as a gas lift in raising the oil. Heated vapors will also probably be formed.

The average crude petroleum oil of 12 to 17 degrees Baume reaches practically its maximum fluidity at 150 degrees Fahrenheit. By comparison with the known table of viscosity of crude petroleum oil at 60 and 185 degrees Fahrenheit, water equaling 1, it will be found that oils ranging from 12 to 17 degrees Baume, when heated to a temperature of 185 degrees Fahrenheit, are more liquid than oils ranging from 19 to 23 degrees Baume at a temperature of 60 degrees Fahrenheit; consequently, heavy oils at a temperature of 185 degrees Fahrenheit can be handled as easily as light oils at a temperature of 60 degrees Fahrenheit.

Besides facilitating the pumping and handling of the heavy oils the liquefaction of the oils by the internal combustion heater will permit the removal of impurities, such as water and sand, by the action of gravity.

The expansion of water with increase of temperature amounts to over four per cent, between 32 and 212 degrees Fahrenheit. If water is 180 degrees Fahrenheit hotter in the well than in the formation, 100 feet of water in the formation balances 104 feet of water in the well. Therefore the heating of the water by combustion will ma-

terially assist its upward flow. The expansion of petroleum oil by heat is much greater than that of water.

In discussing the action of the internal combustion heater, parties have expressed a fear that oil and gas wells will be set on fire by the explosions. A greater heat is generated when a large charge of nitroglycerine is exploded, than when a mixture of natural gas and air is exploded, but even then gas and oil wells are not set on fire when nitroglycerine torpedoes are employed to shoot them. Consequently, no danger need be apprehended when a mixture of air and gas is used, if care is taken to have the explosion take place at a depth below the surface of the oil or water in the well. Without a sufficient quantity of air being present no liquid or gas will either flash or fire if confined in a closed vessel, and heated to a very high temperature.

If any gasoline is present in the gas used, the same compression that forces the gas down the well to the combustion chamber will abstract the gasoline from the gas.

Judging from the great waste of gas in the oil fields, it can be said that the power and gas used with the internal combustion lift and heater will cost but little.

In the manner of operating a well as shown in Fig. 1, if any natural gas is present it will not be contaminated by the gases of combustion, as will be the case in the manner of operating a well as shown in Fig. 2.

The product of complete combustion of a hydrocarbon and air, is carbonic acid gas and water. This gas, being intimately mixed with the water raised from the well, will to some extent go into solution with the same. Some lands when irrigated with this gaseous water will be benefited, producing larger crops.



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Vol. VI.

San Francisco, Cal., July, 1914

(Issued Aug. 10)

No. 12

War Overshadows World

Brief Summary of War Developments

It seems superfluous to mention the fact that the world-war now raging is the one topic of every tongue, when from five to ten "extras" are being issued by all the afternoon papers, with war news occupying nine-tenths of the space of all.

The war appears one of the most unjustifiable in history. The major portion of the world has probably already forgotten what started it, and all eyes are focused on the fleets and armies of the world's greatest powers, which, with the single exception of Our Country are involved. One small hope of peace yet remains; President Wilson's offer of mediation between the warring powers. It is said that Germany is considering accepting this offer; peculiarly appropriate, if so, as Germany is generally blamed for the world mix-up and is the aggressor in France and Belgium at the present time. The line-up in the colossal slaughter-game is strongly against Germany—England, France, Russia, Belgium and Servia against Austria-Hungary and Germany. So far, Austria-Hungary's war moves have been confined to the attack on Belgrade and a little skirmishing. Russia, Germany, England, France and Belgium have mobilized and Germany is attempting to cut across Belgium to France in order to repeat their victory in the "Franco-Prussian War." Thus far they are reported to have met tremendous losses at the hands of the Dutch and French. The newspapers give the details. Some dispatches place the German loss alone, at Liege, at 25,000 killed.

All international business has been affected by the war. Mail and transportation are entirely subordinated to the needs of the armies and navies of the powers. American tourists, stranded in Europe, are being provided for by our Government; seven millions in gold has been sent to Europe in an American cruiser to cash American checks, and our Government is otherwise attending to the needs of the Americans abroad. Probably special ships will have been sent, by the time

this paper is issued, to bring home American citizens. America's neutrality has, of course, been proclaimed. The general opinion here is that America will be called upon to provide to an unusual extent the food necessary to maintain the fighting countries, and, as a result, wheat and all grains, meat and tinned goods, have mounted tremendously. The extraordinary number of European army reservists in America responding to their countries' call is vacating hundreds of positions, and instead of work being scarce it is becoming more and more plentiful and some dispatches state a labor famine is threatened. On the other hand, interference with international shipping and other business may temporarily cause a considerable dearth of work.

As far as we can estimate, close to five billion dollars has been authorized or called for by the different countries with which to carry on the business of human annihilation.

As a natural result of the lightning-like war developments, there was a quick unloading of securities in the world's exchanges, most of which closed down to avert hysterical selling. The United States Government has been joined by the nation's great bankers in providing for the emergency, and the country's finances are in splendid shape.

Naval battles are reported daily and most of the losses are thus far credited to the German forces. The whole world is waiting for war news.

What Effect Will the War Have on California's Oil Business?

Many oil men are asking this question. Some say that the war will boom oil: that it will force trade in American ships, and increase the consumption. As the Canal is now ready for commerce there may be a good deal in this idea. On the other hand, some business may suffer so that what is sold to ships may be offset by the temporary lack of market to the manufacturing business. If the Shell Company is not already well stocked with products, they may have to hurry their refinery here, as shipping in British bottoms with German cruisers waiting to seize the ships, is more or less risky business.

All American oil in British ships will also be likely

to seizure. As far as new trade through the Canal on account of the war is concerned, any ships that start burning oil will continue. What the future will develop remains to be seen, but it looks to The Derrick, for one, as though the war would do the oil business good rather than harm, as California's oil trade is mostly a Pacific Coast trade and is the least likely trade in the world to be disturbed, so that any new trade will just be that much added.

Looking in other directions, fuel oil will play, or is already playing, a big part in the naval end of the war. This means increased use of oil by the navies of the world; the coal using ships, it is said by experts, stand less show in battle and therefore most likely to be destroyed.

From another angle, there will probably be a number of companies which will assess their shares. Shareholders will have to be wary. There are many angles to this war business.

If the present war lasts more than one year it means the rehabilitation of the American Merchant Marine. Expert economists are already stating that if the war lasts from two to three years the greatest prosperity the American Nation has ever enjoyed will be experienced. Our County's manufacturing interests will prosper as never before; our export trade will increase beyond our ability to supply; agriculture and farming of every description and business in every ramification will boom. Increased prosperity and happiness for labor and capital alike are promised. All this prosperity naturally includes The Oil Business; manufacturing and transportation can't be done without oil on this Coast. Big things are coming our way. America is already the greatest commercial nation; last year our home trade was **FORTY BILLION DOLLARS**, or equal to the international exchange of the world; while our foreign trade was **FOUR BILLION DOLLARS**. Watch it grow! Talk about prosperity coming; it's here now!

U. S. Geological Survey's Final Production Figures For year 1913

In the last issue of The Derrick were published the big facts regarding Petroleum production in this country in 1913, as determined by the Geological Survey, but detailed figures were not given as the Survey's bulletin did not reach us early enough to reproduce the table. Believing that the summary is of most value to our readers, inasmuch as they have already had our set of detailed figures covering California, and for the further reason that it gives at a glance the general

petroleum conditions throughout the entire county, we have had a cut made, obviating any typographical errors, and present same below.

While the Survey's California figures are 103,000 barrels under the Standard's figures, this amount is immaterial, being somewhere around one-tenth of one per cent. difference! This table gives a very high class general grip on oil conditions throughout the country last year and at the beginning of this year. It is just what producers and refiners alike have been looking for:

Comparative statement of the production and value of petroleum in the United States in 1912 and 1913.

State or region.	1912			1913			Increase (+) or decrease (-).		Per cent of increase (+) or decrease (-).	
	Quantity (barrels).	Value.	Average price per barrel.	Quantity (barrels).	Value.	Average price per barrel.	Quantity (barrels).	Value.	Quantity (barrels).	Value.
Appalachian.....	26,338,516	42,818,384	1.626	25,921,785	63,708,981	2.458	- 416,731	+20,890,597	- 1.58	+ 48.79
Lima and Indiana.....	4,925,906	4,794,784	.932	4,773,138	6,588,068	1.380	- 152,768	+ 1,793,284	- 3.10	+ 37.40
Illinois.....	28,601,308	24,332,605	.851	23,893,899	30,971,910	1.296	- 4,707,409	+ 6,639,305	- 16.45	+ 27.29
Mid-Continent.....	65,473,345	45,300,669	.692	84,920,225	80,767,758	.951	+19,446,880	+35,467,089	+ 29.70	+ 78.28
Gulf.....	8,545,018	6,344,173	.742	8,542,494	7,993,997	.936	- 2,524	+ 1,650,824	- .03	+ 26.02
California.....	87,272,593	39,624,501	.454	97,764,525	45,661,400	.467	+10,491,932	+ 6,036,899	+ 12.02	+ 15.25
Colorado and Wyoming.....	1,778,358	998,131	.561	2,595,321	1,362,011	.525	+ 816,963	+ 363,880	+ 45.94	+ 36.46
Other.....				734,843	767,263	1.930	+ 34,843	+ 67,263	.....	.....
Total.....	222,935,044	164,213,247	.737	248,446,230	237,121,388	.954	+25,511,186	+72,908,141	+ 11.44	+ 44.40

Methods of Recovering Oil in California, which is "Technical Publication 70" of the U. S. Bureau of Mines, written by Rolph Arnold and V. R. Garfias, is the best exposition of California methods of recovery yet written. It is filled with interesting facts and figures; a great deal of the data will be news to all the readers as few operator's experiences are of so general a character as to give them knowledge of all the conditions discussed. The Derrick expects to use portions of the information on occasion.

Studying Montana Oil District

The U. S. Geological Survey has had Ralph Arnold and Walter English studying the new prospective oilfields called the "Sweet Grass District," on the Montana-Alberta line. This is the country being prospected by Ira Segur, formerly here with the Spreckels interests. A withdrawal of the American lands not yet filed upon is expected. Canadian Government geologists have also been studying the district.

Practical Conservation

Some of the ideas of Dr. Jos. A. Holmes, Director of the United States Bureau of Mines, as Outlined in His Address to the Members of the Natural Gas Association of America.

(Editor's Note: The following paragraphs are excerpts only from Dr. Holmes' address, but as showing the ideas and ideals of the head of the Bureau of Mines, which is doing its utmost to aid the Oil Industry, they should be very interesting to our readers.)

"I am not interested in any way in that sort of conservation which looks toward the locking up of the natural resources of the country for the future when we need these resources ourselves during the present generation. But I think we will all agree as a practical doctrine of conservation that while we have a right to use everything we need at the present time, yet we have no right to waste unnecessarily what is the heritage of generations yet to come. It is hard, I find, to get people to realize the importance of conserving our natural resources under this principle, especially in view of the fact that we have a new, and to some extent, undeveloped country, but in talking with people from the older countries like Great Britain where they have operated industries for a thousand years as compared with our one hundred years, I find that they realize what a thousand years means and they realize how the resources which they are now using at so rapid a rate will, in a few hundred years, be practically exhausted and that when those resources are exhausted it means almost annihilation for any country situated as Great Britain is and which is so entirely dependent upon the development of its various mineral resources with which it has been so generously blessed, for its commercial success. And when we realize the importance of preventing waste of mineral resources, drawing our information from the experience in the older countries, it makes us more serious in dealing with this important problem in this country. In the last few decades we have become a great manufacturing and industrial nation. In the earlier years of our history we were an agricultural people, but when we look at our production of coal, which is becoming more and more an index of the great industrial progress of the nation, it makes us realize pointedly the importance of conservation in view of increased demand, for you will find that during the past one hundred years—it was just about one hundred years ago that we began to use coal in the United States—we have doubled our consumption of coal every decade. In other words, from 1900 to 1910 we used almost as much coal as we had used during the seventy-five years preceding. When you say that to a man he is apt to reply, "Of course that can not keep up indefinitely," but why may not consumption of coal increase enormously? We used thirty years ago about one ton of coal per capita. During the past year we used nearly six tons of coal per capita. More and more we are becoming a labor-saving country; more and more we are becoming a manufacturing country; more and more we are becoming a country of transportation and all our industries depend upon the utilization of our natural fuels. My opinion is that replacement of fuels by water power is going to be somewhat like the re-

placement of the street transportation facilities of a great city like New York by subways and elevated roads. You may remember when the construction of elevated roads in New York City was proposed people said that these roads would destroy the surface lines, but they are crowded; and when the subways were projected they were to accommodate everybody, and yet the surface cars are just as crowded now as they were before the elevated or subways were used. I don't believe we will ever notice a difference in our consumption of coal or natural gas—except locally—through the development of our water power, for that will be an incident, not a big factor, in the future development of this country. These great resources with which nature has provided us are resources which we ought to use wisely and by using wisely I mean that they should be used with common sense, **WITH RIGID ECONOMY AND WITHOUT ANY UNNECESSARY WASTE.** The Bureau has been to do something of late towards getting the oil men interested in the saving of natural gas, and occasionally they would very frankly tell us "We have no interest in natural gas." That is what the members of the Ohio Oil Company told the courts of the country a few years ago in connection with that famous Ohio-Indiana suit. What they were interested in was getting oil and the gas was given away and the only thing for them to do was to let the gas out of the way in the simplest and most inexpensive manner possible. But we do not often find that sort of a situation and I am finding as we enter more fully into practical association and co-operation with the men who are developing these resources, that more and more they are becoming willing to listen to practical suggestions which may enable them to prevent waste of some other resource, provided the prevention of that waste does not materially interfere with their own particular business.

The great problem confronting the Bureau in the oil and gas fields is to show the oil man how the natural gas can be conserved for the people of this country, who want to use natural gas, without interfering with the production of oil. You realize, no doubt, that one of the most difficult phases of that problem is how to conserve the gas that comes out with the oil itself, and for that we have not yet found a complete practical working solution. One hindrance to our efforts has been the lack of adequate funds to carry on investigations of this character so that we have had to play with it, so to speak, as best we could. But it is a problem that requires solution and considerable work will have to be done before we can feel that it has been solved so that we can say to the oil man, "You ought to save this gas, it is a practical thing to do, and you can do it without serious injury to your oil business."

And since the delivery of the above, The Derrick might add, a very good man, W. A. Williams, has been selected by the Bureau to help carry on the petroleum work. The international war now raging shows the necessity for conserving the national resources to the utmost degree practicable.

California Derrick

The Oil Authority of the Pacific Coast

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THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

The Nation's Flags are at half mast in honor of the memory of noble Mrs. Woodrow Wilson, wife of our great President. The Nation sorrows from a sense of personal loss. The sympathy is universal, as the flags half-masted everywhere attest. No words but kind words could ever be spoken of Mrs. Wilson. The National feeling for her has been a feeling of respect and esteem. And so, in the hour of our great President's sorrow, the Nation bares its head. The White House will be very empty now. One of the real noblewomen of the world is no more.

* * * * *

"Glorious War" has already claimed upwards of 40,000 human beings, inside a few days, if the news dispatches are authentic. Conspicuously absent among the dead are the instigators of the glorious business who will continue to cheer on their subject "into the jaws of Hell." The United States' wars have all been for human liberty, and the betterment of humanity, and not instigated by a selfish desire for territorial acquisitions. Our sympathies are with the families of the slaughtered, and as far as the nations are concerned, with France and England, as against the ambition of the "War Lord."

* * * * *

The Geological Survey deserves to be complimented on the issue of its comprehensive bulletin covering petroleum production in 1913 and allied statistics. We present the summary elsewhere and take this opportunity of calling attention to the Survey's excellent work.

* * * * *

In this issue of The Derrick we are devoting considerable space to photographs of the Exposition "palaces," and are running a number of other illustrations which considerably limit the space for reading matter. The next issue will not be so profusely illustrated.

First Six Months of 1914

Show Continuous Growth of Production

The following figures tell their own tale pretty well—too much gusher oil for a nicely balanced market. They show a surplus for the first half of the year amounting to 2,386,791 barrels of oil and total crude stocks in excess of 52,000,000. At present the daily surplus is 26,000 barrels and there is 14,000 barrels shut-in production available, or a potential daily surplus of 40,000 barrels. This is the reason for the most recent price reductions.

Unless there is an extra large call for fuel from American ships as a result of the paralyzation of European shipping because of the war, the extra oil being produced will have to go into storage, which is, of course, paid for by the producer, directly or indirectly. There is always the alternative of shutting in oil by such companies as are able to avail themselves of it, but this usually is put off until the prices have been slashed below profit. On the whole, the outlook is not very encouraging to producers at present, but the Canal is now open for business, and the result may be immediate demands by Atlantic shipping for California oil. Possibilities of selling for war vessels burning oil may also appear. Thus far they are nebulous indeed. Following is the table:

Month	PRODUCTION (Barrels of 42 gallons each)		CONSUMPTION	
	Daily Average	Total for Month	Daily Average	total for Month
January .	281,835	8,736,885	265,786	8,239,363
February .	280,561	7,855,708	263,109	7,367,064
March ...	286,591	8,884,321	284,960	8,833,769
April	284,701	8,541,030	292,108	8,763,238
May	297,466	9,221,446	275,129	8,528,995
June	302,400	9,072,000	276,406	8,292,170
Totals .	288,926	52,411,390	276,250	50,024,599

Average daily surplus first six months 1914, 12,676 bbls.
Total surplus, 2,386,791 barrels.

Total stock Crude Oil on hand June 30, was 52,145,007 barrels—Six months supply.

* * * * *

Our Calgary Article has been delayed until next month, owing to the war news and other pressing features presented in this number of The Derrick. The article will be strictly up-to-date and accompanied by illustrations of the "Dingman" well, exposed geological strata, and other features of interest in the new northern district. The geology of the district as well as the story of development to September first, will be covered in as thorough a manner as possible. The latest news from Calgary is that the whole district is war-mad. All the stock exchanges have closed down and discussing the war outlook is about the most general occupation. As far as oil is concerned, the morning "Albertan" of Calgary, stated on August first that the "Dingman" discovery well was being pumped and was "yielding up fluid at the rate of 250 barrels per day." We quote:

"Dingman Camp, July 31.—Perhaps today the Discovery well of the Calgary Petroleum Products Company made its start on a long period of production. The pump was connected with the bore early this morning. All day it worked steadily, the fluid responding to the pulsations of the pump, and the estimate of Driller Hovis, as expressed to C. A. Owens, who visited the well about 3 o'clock this afternoon, was that

the well would produce from 250 to 300 barrels of gasoline every twenty-four hours. This would be the equivalent in values of the production of a California well the output of which was in excess of 2,000 barrels per day."

In our Calgary special we will attempt to give a fair, unbiased and true account of the new field and its prospects.

* * * * *

The Nations Petroleum Exports for the fiscal year ended June 30, show enormous gains both in quantity and value. To show the foreign oil business that this country is doing we give the figures for the past three years, ending with June:

1914	2,269,218,073	140,879,856
1913	1,947,746,303	134,514,109
1912	1,758,935,436	110,623,687

—which is "some business."

* * * * *

Exports of Petroleum Products From California in June

June was a tremendous export month for California, the total gallonage being but 20,000 gallons shy of 52,000,000 gallons, valued at \$1,484,597. Our table shows at a glance the quantities and values of all the commodities exported. The increase over May's exports totalled 16,785,094 gallons, the increased returns amounting to \$500,473!

Following is the table:

	Gallons	Dollars
CRUDE		
Southern California	2,520,000	45,000
ILLUMINATING		
San Francisco	16,082,648	750,377
Southern California	3,114	466
LUBRICATING AND PARAFFIN		
San Francisco	179,062	23,686
Southern California	566	211
NAPTHAS, GASOLINE, Etc.		
San Francisco	958,943	97,365.
Southern California	13,208	1,980
RESIDUUM, GAS OIL AND FUEL OIL, etc.		
San Francisco	32,189,565	564,840
Southern California	33,449	672
Total	51,980,555	1,484,597

* * * * *

Production, Consumption and Field Operations During June, 1914

Production—For the month of June the daily average output was 302,400 barrels and could have been 316,400 barrels, as 14,000 barrels daily production remains shut in, for the most part in the Kern River and Coalinga fields. Right now California is capable of producing 115,486,000 barrels per year, using the figures above as the basis for estimating. The California Derrick's estimate of California's production capabilities is very closely borne out on these figures. Production for the first six months of this year is discussed elsewhere in this issue.

Consumption, or shipment, was less for June than for May, totalling 8,292,170 barrels, a daily average of 276,406 barrels. Surplus averaged 25,994 barrels daily.

Field Operations developed no unusually large wells,

though in the Midway-Sunset the K. T. O. got a 1000-barrel well in its No. 1 on 5. 32-24, by deepening, and the Caribou's No. 4 on 28, 31-32, deepened to 3120 feet, was increased to a 1000 barrel well, the product of both wells was over 28 degrees Baume; and in the Whittier-Fullerton, the Brea Canyon Oil Co.'s No. 11 A, on 2, 3-10, was increased to 1300 barrels daily by deepening to 3900 feet. The gravity is 26 degrees Baume. The Midway-Sunset is today the world's most remarkable oil district, making 150,000 barrels daily of oils varying from 12 degrees to 40 degrees. The Whittier-Fullerton fields have been developed wonderfully within the past eighteen months, and are today producing more than 41,000 barrels of high grade oil daily. Coalinga is still the second largest field in the state, however, in spite of the big developments in the Southern fields.

The usual details are presented in the following table:

FIELD	New Rigs	Drilling	Completed During Month	Abandoned During Month	Producing	Production Per Day
Kern River	5	5	4	1,432	20,100	
McKittrick	3	2	2	265	11,187	
Midway-Sunset	17	72	21	1,400	149,543	
Lost Hills-Belridge	3	13	4	216	13,078	
Coalinga	1	24	5	878	45,058	
Lompoc and Santa Maria	2	14	1	286	11,995	
Ventura County and Newhall	3	28	3	419	2,995	
Los Angeles and Salt Lake . . . . .	..	4	2	680	7,091
Whittier-Fullerton	10	95	1	535	41,125	
Summerland . . . . .	..	..	..	108	153
Watsonville . . . . .	..	..	..	5	75
Total	39	257	43	4	6,178	302,400

* * * * *

International Petroleum Commission—The Derrick received from Herr Ubbelohde, Karlsruhe, Germany, under date of July 2nd, an announcement that the meeting of the International Petroleum Commission would begin in Budapest on September 6th and continue until October 2nd. We presume that the European War puts an end to the meeting.

* * * * *

Annual Report of the California Development Board, just come to hand, is about the best summarization of California's resources, industries and possibilities that could be gotten into 64 pages. This is the 24th annual report and covers the year 1913 in the completest and most comprehensive manner. Statistics are given on every industry. The presentation of the facts is particularly interesting and instructive: every line tells something of value. Illustrations are plentiful and excellent and the best feature of the publication is that "The Board has nothing to sell and does not represent any real estate or commercial enterprise." It was with pleasure that the Derrick's management noted the credit given for California Oil Production statistics. Those desirous of securing this excellent Bulletin should write to the Secretary, California Development Board, Ferry Building, San Francisco.

* * * * *

The "Third Annual Statistical Report of the San Francisco Chamber of Commerce" covering the year 1913, has recently come from the press. The volume consists mostly of statistics, dealing with San Francisco's business. For a commercial house or individual desirous of getting trade information quickly and accurately, a better medium could hardly be selected.—A valuable report.

War Will Not Cause Postponement of



The Palace of Horticulture, the dome of which is of glass and steel. It is a magnificent building, artistic to the last detail, and one of the finest architectural achievements on the Grounds.

*Grounds and Palaces of Great
Beauty and Magnificence will open
to Public on Scheduled Time
February 20, 1915.*



Tympanum of Doorway of Palace of Education



On the left the Palace of Machinery the first Great Exposition Palace to be completed, where the Diesel Engine Exhibits will be situated. On the right the Palace of Mines and Metallurgy, beneath the floor of which will be a mine fully equipped and run under the auspices of the U. S. Bureau of Mines. The Oil Exhibits will be more or less scattered over the Exposition grounds

Exposition, Now Nearing Completion



General View of Exposition from Pacific Heights

On the Right
The "Half Dome of Philosophy"
Palace of Education

In the oval below the
OREGON BUILDING

At bottom of Page the Beautiful
PALACE of the **DOMINION OF CANADA**, our sister country's splendid Hall of Representation.



The Settling Tank

Interesting Publications of the U. S. Geological Survey, recently announced, are:

Bulletin 541-I, Coalfields in Idaho, Washington and Oregon.

Bulletin 550, Ore Deposits of Eastern Washington.

Bulletin 579, Reconnaissance of Oil and Gas Fields in Wayne and McCreary Counties, Kentucky.

Bulletin 581-A, Oil Shale of Northwestern Colorado and Northeastern Utah, by E. A. Woodruff and David T. Day. Should be of particular interest at this time.

Bulletin 581-B, Oil and Gas in the Western Part of the Olympic Peninsula, Washington.

Bulletin 585, Useful Minerals of the United States.

General Report on Mineral Industry of California.—

Under date of July 31, The Derrick received from the State Mining Bureau an announcement that preliminary work upon a report covering "all phases of the mineral industry in California," would be begun on August 1st. The field work necessary to compile a report so complete in scope as the Mining Bureau contemplates, has been a task of enormous proportions, but the more important part of it has been done and "the manuscript for the finished report will be in the hands of the printer in the near future." Concerning the petroleum report, the State Mineralogist says:

"The subject of petroleum has been handled as a unit and a separate corps of engineers is now engaged in completing a report which will embody the results of their investigations. This work will be published in a volume by itself but will in reality be a portion of the general report." The State Mineralogist's announcement closes with an expression of the willingness and desire of the officials of the Mining Bureau to "promote the interests of the mineral industry in all possible ways."

Alfred Abbey, engineer of Taft, has published what is declared to be the best map of the Midway-McKittrick-Sunset field yet gotten out. The map shows ownerships, roads, pipe lines, townsites, contour lines and numbers of each well and is corrected and revised to May 1st. The map sells for \$10 each. It is highly praised.

John Hahn, 3827 Naomi Ave., Los Angeles, has perfected and patented the "Hahn Sucker Rod" for which he claims great advantages over rods now in general use, one of which is that his rod has stood "from 30 to 40 strokes of full reciprocations per minute; whereas with the old style rod the pump could not be run at a greater rate than from 12 to 15 strokes per minute and at that rate breakage and buckling could not be avoided." The "Hahn Sucker Rod" has 4 blades and thus divides the oil into 4 columns. An illustrated pamphlet has been issued for the information of the oil trade.

Office of Public Roads, U. S. Department of Agriculture has issued Bulletin 105, dealing with experiments in dust prevention and road preservation in 1913, at Chevy Chase, Maryland. This is a very high class Bulletin

and should be of decided interest and value to road oil companies, highway engineers, asphalt refiners, city engineering departments and persons generally interested in good roads.

The Finest Tanks in California, ten of them, of 55,000 barrels capacity each, have just been completed by the Lacy Manufacturing Company of Los Angeles, for the Shell-Dutch combine on their tank farm near Coalinga, on the California Oilfields, Ltd., property. These tanks are vastly superior to any thus far erected in California, being built for permanent service. The bottoms and shells of extra heavy material and the roofs are of gas-tight construction, supported by structural steel frame-work. In short, the tanks are both oil and gas-tight. The Shell people get the BEST.

900,000 New Steel Storage at El Segundo — The Lacy Company are getting all the big orders. They have recently started construction work on an order for eighteen 55,000 barrel tanks, similar in design to those constructed for the Shell Company, for the Standard Oil Company's El Segundo refinery. The total new barrelage provided will thus amount to 900,000 barrels. El Segundo now has a refining capacity of 30,000 barrels daily, so that plenty of oil on hand is of prime importance. It is said that this capacity will be enlarged later on and also that steel storage tanks to accommodate an additional 2,000,000 barrels are under contemplation if the tremendous present production is maintained.

U. S. Tanker "Kanawha", 475 feet long, 56 feet beam, displacement 14,500 tons, was launched in July. She will be the largest and best naval tank steamer in existence when completed. Her cost is \$1,400,000; her cargo, 2,260,000 gallons. She burns oil, "of course."

Hints on Fuel Oil Burning

Fuel Oil Strainers, made of wire netting or perforated metal, are necessary to insure that the burners are not clogged by sand or dirt in the oil. They should be so made and put in that they can be quickly and easily cleaned.

Steam for atomizing oil should be dry to produce a steady white flame. Water in the steam, usually due to condensation in the supply pipe or priming in the boiler, makes the flame sputter and gives poor combustion. A steam separator or superheater will stop the trouble.

Oil Storage Tanks should be placed at least two feet ground and thirty feet from the nearest building, with the top of the tank below the level of the lowest pipe in the oil system. If the tank is placed above ground it must be at least 200 feet from inflammable property to comply with the underwriters' requirements.—Courtesy of Journal of Electricity, Power and Gas.

Japanese Gusher—Nippon Oil Co's well in the Akita field is reported to be maintaining a daily output in excess of 10,000 barrels. The well was drilled with California tools.

The Broken Arch at Point Purisima

(By A. S. COOPER, Former State Mineralogist of California.)



Forming the southern part of Point Purisima, Santa Barbara County, California, is a broken arch of an anticline. Its span is over three miles in width. This arch or anticline was formed by the uplifting of stratified rocks by the upward pressure of underlying molten rocks. The southern abutment of the arch is still standing.

By the distillation of hydrocarbons, removal of minerals on solution with hot water, contraction of sedimentaries by hydro-thermal action, and the cooling of the rocks the support of the arch was removed and the arch gradually collapsed, twisting, bending and breaking the strata.

After the arch had broken and fallen, its uneven surface was planed down by the action of the ocean to a plain sloping towards the ocean. After this erosion the coast was uplifted in mass to its present height of about 40 feet above sea level. The sculpturing of these hard rocks by the waves of the sea must have taken many hundreds of years.

The shales and sandstones composing the arch were deposited beneath the ocean in nearly horizontal beds, as mud and sand. When they were being uplifted, fissured and bent they were bituminized. The petroleum oil which entered and impregnated these close grained rocks must have been in a vaporous state.

They were then subjected to hot alkaline solutions, which converted the insoluble silica of the shales to a colloidal state. While they were plastic they were bent, twisted and molded so that one stratum fills another stratum. While subjected to these hot solutions the bitumen in the shales was distilled, producing billions of cubic feet of natural gas, and leaving a residue of asphaltum disseminated through the rocks. After cooling they hardened and were then shattered, seamed and broken; these openings were then filled with petroleum oil, which has evaporated forming viscous and hardened asphaltum.

The accompanying photograph illustrates their present condition, looking south towards Surf from the axis of the anticline.

These rocks are brown and black in color from contained asphaltum; they are hard and flinty, and translucent in thin fragments. They are badly broken and shattered, the interspaces being filled with viscous and hardened asphaltum. In some places springs of heavy oil occur, and gases rise through the water off shore.

Many wells on Mount Pinal in the Santa Maria oil field obtain their supply of oil from the cracks and seams of shales of a similar character. Over fifty thousand acres of these flinty shales are exposed in Santa Barbara county, and a number of large deposits are scattered throughout the state.

Jameson and Wrampelmeier Win—As was almost certain, the Santa Fe railroad interests lost their opportunity to continue litigation whereby they hoped to reverse judgment secured against them, when the Superior Court in Kern County denied them a new trial. This means that the Chanslor Canfield Midway oil company must make restitution as per the order of Judge Pewett before whom the case was tried; it means complete victory for W. J. Jameson and T. J.

Wrampelmeier and is a warning to big interests that grafting is not *always* as easy as it looks.

Blown to Atoms—George Turner, Los Angeles oil man and inventor of a new method of oil pumping by gas pressure, was blown to atoms by a tremendous explosion in the Santa Clara well, five miles north of Santa Paula, on July 30. His assistant at the time was also killed. Both were completely incinerated by the fierce fire that followed. Mr. Turner was trying out his new method.

Interesting Developments of Recent Date

Under Its Own Colors Now

The American Gasoline Company, the California subsidiary of the Royal Dutch-Shell combine, announced during the last week of July that beginning with August first, "the business will be carried forward in the name of the SHELL COMPANY OF CALIFORNIA, INC., and is glad to have this opportunity of thanking you for your valued orders, and asks your continued patronage of Shell Products." The Company also announced that it "is now marketing a complete line of lubricating oils and greases and respectfully solicits your orders, which will be given careful and prompt attention."

Combined Oil Co. have just made a contract with Woods & Huddart of this city, whereby the latter are to erect three rigs, two of which are now completed, the third to be put up within the next four to six weeks. Drilling will be rushed on all these wells under direction of the new superintendent, Mr. Fleming, who drilled the Company's two best wells. In addition to the rigs, President Dean ordered three or four carloads of South Chester casing and tubing.

Valley Pipe Line Company, Shell-Dutch subsidiary, has asked authority of the State Railroad Commission to issue \$5,318,400 stock at \$80.00 per share, of their \$10,000,000 capital; par value of shares is \$100. No bonds are to be issued and the stock will be immediately subscribed by the parent concern. The permission is considered sure to be granted.

Western Union Oil Co. earned \$208,419 during year ending March 31, 1914; an increase over the previous year of close to \$27,000.

Union Oil Co. declared a 2 per cent. dividend on its outstanding capital stock in July. Five million shares of stock in British Union Oil Co. is reported to have been purchased by the British public this past month.

California Oilfields, Ltd., subsidiary to The Shell Company, earned \$682,762 in 1913. The Shell Company has under consideration bids from four concerns for the construction of a 50,000-bbl. capacity tank steamer. In addition to their big tankage, refinery and pipe line construction, delivery facilities are constantly being added to and big business being generally prepared for.

Turner Oil Co.'s new well, sec. 2, 20-15, Coalinga, is making 1,100 bbls. daily of 31 gravity oil. The gasoline plant is now turning out 2,400 gallons of 71 gravity gasoline. Company is in fine shape all around.

Buick Oil Co. has two producing wells at present. No. 4, making from 160 to 175 barrels per day and No. 5, making from 25 to 30 barrels daily, or a total output of about 200 barrels daily, from the 40-acre property on section 32, 31-23, near Fellows. No new development work is being done at present either on the Fellows property or on the 40 acres in 6-23-11. The company has an indebtedness of about \$10,000, and has in storage about 18,000 barrels of oil. The assistant secretary, Mr. Allison, has informed us that "there is no prospect for the early payment of dividends." The company appears in a better position than would

have been supposed to hear the criticisms levelled at it some time back.

PARKFIELD DEVELOPMENTS

Continued Interest is being displayed by some of the most successful oil men in the State in the Parkfield district so that the constant flow of operators in and out of this section gives a very hopeful feeling to the operators. The little town from which the district takes its name is getting used to oil men and is profiting somewhat in increased trade. Late development notes are:

Middle Ridge Oil & Development Company, whose holdings consist of about 2500 acres west of town, have been delayed in getting started because of a shortage of teams to haul material and supplies, and men. They are now assembling their equipment and expect to be drilling before the month closes. The Western field, as it may become known, is the most prolific of results thus far, as an oil field. A considerable portion of the district so far "worked" indicates a shallow field producing high class fuel oil. The Middle Ridge Company's holdings are considered especially good.

Monterey Oil Company—(Parkfield is in Monterey County), have temporarily stopped work awaiting repairs to equipment. There is a strong gas pressure in the hole and a good showing of oil.

Future Success Oil Company is still what its name indicates, as they have considerable trouble, having lost their tools in the hole and a fishing job is in progress. Expect to be running in very short time.

Parkfield Syndicate.—Drilling again resumed. Mr. Page has got some new talent on the job and Mr. Lonis Patraquin, the general manager, expects to bring in a well from a depth not more than 250 feet below present bottom of the hole, about 300 feet, where the 8 inch casing was landed. Water was shut off at 260 feet with 10 inch.

Parkfield Pioneer Oil Company are expected to begin operations in the near future. Mr. Henry B. Hayden, president, has shown a party of interested persons connected with the company through the field and over the Company's properties, consisting of about 7000 acres.

BIG FACTS IN LITTLE ITEMS

The following interesting facts are culled from our contemporary, the Oil World:—**The Independent Agency** is selling 50,000 barrels of fuel oil per month to the Standard Oil Co. at 40 cents per bbl. **U. S. District Court**, Judge Dooling presiding, has permitted the Government attorneys to amend their complaint in equity suit 45, vs. Southern Pacific et als., in order to develop in detail allegations of fraud. **July output** of California oil is forecasted the same daily rate as June, that is, in excess of 300,000 bbls. **Curtailment of production** by agreement among the operators of Fullerton field is being mooted and there will probably be a concerted move to cease drilling wells where possible within a short time. A meeting of these operators is scheduled for very early date. **U. S. Govt.** is preparing to have two new oil barges constructed at Mare Island in quick time. **"Temporary Oil Land Relief Bill"** in the form of an amendment to the Smith Bill of 1911, has been passed and is expected to become law. Provides for granting of patent to operators who had made discovery or were drilling on withdrawn lands prior to October 3, 1910. Whatever bill becomes LAW will be published in The Derrick. **The Church Oil Land Bill** is also reported to have been passed. **Construction of the Shell-Dutch Pipe Line** between Coalinga and Fellows has begun. **State Cons. Oil Co.** has just brought in two new ones, with a combined output of about 450-500 bbls. daily; depth less than 1,000 ft.

California Oil in Alaska

Fifty thousand barrels of California crude oil is now used annually by vessels plying the great Yukon and tributaries. There are now about 90 automobiles in the North Country, a dozen or so of motorcycles and

one "Caterpillar" tractor, which hauls loads of as much as 61 tons weight over the frozen Yukon and on Lake Le Barge. Alaska is affording a splendid market for California oil products and the Standard Oil Company of this State, is doing a thriving trade in the Northernmost possession under the Stars and Stripes.



"Caterpillar" Tractor Hauling Eight Tons of Hay up Hill. 22 per cent Grade



Standard Oil Company's Plant at Ketchikan, Alaska

Standard Oil's New and Old Prices.

On July 30 Standard Oil's new, reduced prices went into effect. The different manner of classifying the oils will be noted. Following are the new prices:

SAN JOAQUIN VALLEY FIELDS.

13 degrees to and including 20.9 degrees gravity, 40 cents per barrel.
21 degrees to and including 26.9 degrees gravity, 42½ cents per barrel.
27 degrees to and including 28.9 degrees gravity, 45 cents per barrel.
29 degrees to and including 30.9 degrees gravity, 55 cents per barrel.
31 degrees gravity and lighter, 60 cents per barrel.

VENTURA COUNTY.

21 degrees to and including 24.9 degrees gravity, 50 cents per barrel.
25 degrees to and including 27.9 degrees gravity, 60 cents per barrel.
28 degrees to and including 30.9 degrees gravity, 70 cents per barrel.
31 degrees to and including 32.9 degrees gravity, 80 cents per barrel.
33 degrees gravity and lighter, 85 cents per barrel.

WHITTIER-FULLERTON FIELD.

18 degree to and including 20.9 degrees gravity, 42½ cents per barrel.
21 degrees to and including 24.9 degrees gravity, 45 cents per barrel.
25 degrees to and including 27.9 degrees gravity, 55 cents per barrel.
28 degrees to and including 30.9 degrees gravity, 65 cents per barrel.
31 degrees gravity and lighter, 70 cents per barrel.

Following are the former prices:

Midway-Sunset District. Per Bbl.	Lost Hills and Belridge. Per Bbl.
14° to and including 20.9° gravity..\$0.40	21° to and including 23.9° gravity..\$0.42½
21° to and including 23.9° gravity.. 42½	24° to and including 26.9° gravity.. .45
24° to and including 26.9° gravity.. .45	27° to and including 28.9° gravity.. .50
27° to and including 28.9° gravity.. .50	29° to and including 30.9° gravity.. .60
29° to and including 30.9° gravity.. .60	31° to and including 32.9° gravity.. .65
31° gravity and lighter..... .65	33° to and including 34.9° gravity.. .70
	35° gravity and lighter..... .75
Kern River Field.	Ventura County.
Kern River Oils, minimum 14° grav. .40	22° to and including 24.9° gravity.. .55
Coalinga Field.	25° to and including 27.9° gravity.. .65
14° to and including 20.9° gravity.. .40	28° to and including 29.9° gravity.. .75
21° to and including 23.9° gravity.. 42½	30° to and including 30.9° gravity.. .80
24° to and including 26.9° gravity.. .45	31° to and including 31.9° gravity.. .85
27° to and including 28.9° gravity.. .50	32° to and including 32.9° gravity.. .90
29° to and including 30.9° gravity.. .60	33° gravity and lighter..... .95
31° to and including 32.9° gravity.. .65	Whittier-Fullerton.
33° to and including 34.9° gravity.. .70	18° to and including 21.9° gravity.. .45
35° gravity and lighter..... .75	22° to and including 24.9° gravity.. .50
	25° to and including 27.9° gravity.. .60
	28° gravity and lighter..... .70

Beating Chemical Action

Water Commissioner Kirwin of Coalinga, has made a number of cross sectional maps of the West Side Coalinga field, which have greatly benefitted the operators in this section, who are now meeting with invariable success in shutting out water from their oil wells. These maps make the field an open book, where the

operator turns to whatever section he is operating on, and locates his trouble zone.

Says Guy Salisbury—"The chemicals in the water found in one water stratum through the West Side field, have been very destructive to the casings in a large number of wells. On one property the chemicals contained in this water stratum have eaten pin holes through the casings in less than two to three years. The wells would begin to make just a little water which gradually increased until as much as 20 per cent of the production was water. Steel casing or iron pipe, it was all the same. In the first instance of this kind that was noticed, it was thought that the water had broken in around the "shoe" and the string of casing was pulled from the well, when it was discovered that the water was coming through the casing itself. In some of the wells the casing has been so badly eaten that a light hammer would easily knock a hole through the pipe almost at any spot. The American Petroleum Company has been very successful in beating this chemical action in a number of its wells on section 30, 20-15. The method successfully used by a number of operators consists of pulling out the old casing and replacing it with new, securing good circulation around the water string, and forcing cement up around the pipe to a point above the upper line of the water sand, thus protecting the pipe from contact with the water and insuring the operator against further trouble of this nature in the well thus treated."

It looks like a splendid opening for some chemist to discover a commercially practicable means of making pipe which will not be affected by waters ordinarily met in drilling for oil.

Official Report of Seaboard Oil & Transit Co.'s Directors has been recently received and corroborates to a marked degree the Derrick's report presented in the June 13 issue. The report states, in brief, that the total monthly administration expense at present amount to about \$190; that the program the Derrick announced, of abandoning the Templor, Section Six and Madison properties and "to confine future expenditures for development to the Gate City property at Maricopa and the Sandoval property at Tampico, Mexico," has been definitely decided on; that the appraisalment of the Gate City property by a chosen board of appraisers justified the management in the determination to con-

centrate work on this property and fulfill the terms of the lease, drilling 3 new wells and cleaning out the old wells; that the Mexican property will be developed not by assessing shareholders, but through sub-leasing, a most prudent plan; that a detailed financial statement will soon be issued; that indebtedness to the extent of \$42,500 was cancelled last year, exclusive of operating expenses; lastly, that the remaining indebtedness is to be paid out of the earnings of the Company's properties. The total to be paid is \$104,789.90. A statement from June 1, 1913 to June 30, 1914, was included, showing receipts and disbursements of \$54,054.72 (including a balance of \$42.) No assessment will be levied until such time as all claims now outstanding are assigned to the trustee or such arrangements made that no individual creditor can interfere with the future operations of the Company. It might be added that there is a comparatively good fuel oil market at present and the outlook for the Gate City's grade is good. With the Company's production increased and a clear track ahead there is every reason to believe that success is at last in view and that not more than one assessment of one cent per share will be necessary to completely finance the Company to a state of financial stability.

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